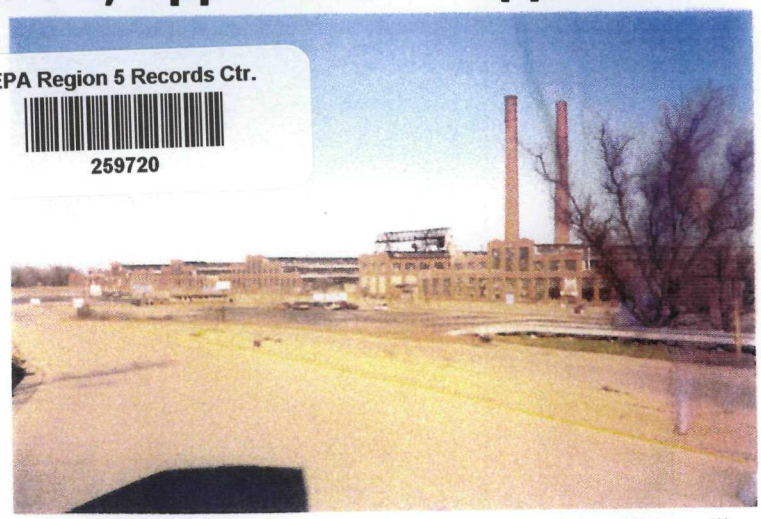
Surface and Subsurface Characterization
Site 2 and Site 3

00002

Former Johns Manville Manufacturing Facility
Waukegan, Illinois
Volume 1, Appendix A – Appendix K

EPA Region 5 Records Ctr.
259720

DRAFT



Former Johns Manville Manufacturing Facility

Site 2

Site 3

Prepared For:
Johns Manville

Prepared By:

ELM CONSULTING, L.L.C.

December 10, 1999

DRAFT

SURFACE AND SUBSURFACE CHARACTERIZATION FOR SITE 2 AND SITE 3

FORMER JOHNS MANVILLE MANUFACTURING FACILITY
1871 NORTH PERSHING ROAD
WAUKEGAN, ILLINOIS 60087

VOLUME 1, APPENDIX A – APPENDIX K

Prepared for:

Johns Manville Corporation
Littleton, Colorado

Prepared by:

ELM Consulting, L.L.C.
Barrington, Illinois

Written by: Jeff Stringer
Project Manager

Reviewed by: Jeffrey B. Seagrist, QEP
Senior Project Manager

Project No. 98000701

December 1999

DRAFT

SURFACE AND SUBSURFACE CHARACTERIZATION FOR SITE 2 AND SITE 3

FORMER JOHNS MANVILLE MANUFACTURING FACILITY
1871 NORTH PERSHING ROAD
WAUKEGAN, ILLINOIS 60087

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1-1
1.1 Statement of Purpose and Scope of Work 1-1
1.2 Surface and Subsurface Characterization Summary 1-1
1.3 Threatened and Endangered Plant Species Survey Summary 1-3
1.4 Wetland Delineation Summary 1-3
1.5 Conclusions 1-3
2.0 INTRODUCTION 2-1
2.1 Introduction 2-1
2.2 ACM Definition and Standard 2-1
3.0 SITE DESCRIPTION 3-1
3.1 Regional Location 3-1
3.2 Site Boundaries, Physiography and Land Use 3-1
3.2.1 Former JM Manufacturing Facility Description 3-1
3.2.2 Site 2 Description 3-1
3.2.3 Site 3 Description 3-2
4.0 REGULATORY ACTIVITIES 4-1
5.0 SITE ACTIVITY AND SAMPLING PLAN 5-1
5.1 Defoliation of Site 2 and Site 3 5-1
5.2 Inspection of Site 2 and Site 3 for Surface ACM 5-1
5.3 Establish Grids for Sites 2 and 3 to Determine Subsurface Soil Sampling Points 5-2
5.4 Subsurface Soil Sampling 5-2
5.5 Soil Core Inspection of Site 2 5-2
5.6 Soil Core Inspection of Site 3 5-2
5.7 Qualitative Threatened and Endangered Plant Species Survey of Site 2 and Site 3 5-3
5.8 Wetland Delineation of Site 2 and Site 3 5-3
5.9 Contractor Information 5-3
6.0 DOCUMENTATION OF FIELD ACTIVITES 6-1
6.1 Defoliation of Site 2 and Site 3 6-1
6.2 Inspection of Site 2 and Site 3 for Surface ACM 6-1
6.3 Establish Grids for Site 2 and Site 3 to Determine Sampling Points 6-3
6.4 Subsurface Soil Sampling 6-3
6.5 Soil Core Inspection of Site 2 6-4
6.5.1 Inspection of Soil Cores for Asbestos Containing Material 6-4
6.5.2 Description of Site 2 Figures 6-8
6.5.3 Inspection of Soil Cores for Expended/Unexpended Lead Shot and Lead Shavings 6-9
6.5.4 Inspection of Soil Cores for Municipal Waste 6-12
6.6 Soil Core Inspection of Site 3 6-12
6.6.1 Inspection of Soil Cores for Asbestos Containing Material 6-13
6.6.2 Description of Site 3 Figures 6-16

6.7 Qualitative Threatened and Endangered Plant Species Survey at Site 2 and Site 3 6-17
6.7.1 Results of the Threatened and Endangered Plant Species Survey at Site 2 6-18
6.7.2 Results of the Threatened and Endangered Plant Species Survey at Site 3 6-20
6.8 Wetland Delineation at Site 2 and Site 3 6-20
6.8.1 Methodology 6-21
6.8.2 Wetlands Delineated at Site 2 6-21
6.8.2.1 "Scrub-Shrub" Wetlands 6-21
6.8.2.2 "Man-Induced" Wetlands 6-22
6.8.2.3 "Waters of the U.S." – Lake Michigan 6-23
6.8.3 Wetlands Delineated at Site 3 6-23
7.0 INTERPRETATION OF RESULTS AND CONCLUSIONS 7-1
7.1 ACM at Site 2 7-1
7.2 ACM at Site 3 7-1
7.3 Lead and Municipal Waste at Site 2 7-2
7.4 Threatened and Endangered Plants of Site 2 and Site 3 7-3
7.5 Wetland Delineation of Site 2 and Site 3 7-3
8.0 RECOMMENDATIONS 8-1
8.1 Management of ACM at Site 2 and Site 3 8-1
8.2 Management of the Threatened and Endangered Species at Site 2 8-1
8.3 Management of the Wetlands at Site 2 and Site 3 8-2

APPENDICIES:

Appendix A - Letter from Brad Bradley (USEPA) to Denny Clinton (JM): Modifications to the "Characterization Plan for Additional Sites" for the Johns-Manville Site in Waukegan, Illinois and the Johns Manville Scope of Work for the Surface and Subsurface Characterization for Site 2 and Site 3
Appendix B – Illinois Department of Public Health News Release (May 15, 1998)
Appendix C – Project Photographs
Appendix D – Scope of Work for the Surface and Subsurface Characterization: "Exhibit A-2 Specification for Surface and Subsurface Characterization of Site 2 - Former Pan Am Games Shooting Range and Site 3 – Former JM Parking Area"
Appendix E – Subsurface Characterization – Polarized Light Microscopy Analyses Data – Site 2 and Site 3 AND *Soil Investigation for Asbestos-Containing Materials, Waukegan, Illinois* – RCM Laboratories)
Appendix F – Surface Characterization Data Sheets – Site 2 and Site 3
Appendix G – Subsurface Characterization Data Sheets – Site 2 and Site 3
Appendix H – Boring Logs
Appendix I – Raw Data for Total Lead Analyses for Site 2
Appendix J – Threatened and Endangered Plant Species Summary Report for Site 2 and Site 3
Appendix K – Wetland Delineation Report (*Wetland Assessment of Site 2 and Site 3 Along Greenwood Avenue, Waukegan, Lake County, Illinois* – Christopher B. Burke Engineering, LTD)
Appendix L – Surface and Subsurface Characterization Site Maps: Figure 1 – Figure 30

LIST OF TABLES

Table 1. List of Contractors

Table 2. Total Lead Results

Table 3. TCLP Leachate Analysis Results

Table 4. State-Listed Plant Species Observed at Site 2

Table 5. Threatened and Endangered Plant Species Plot Descriptions - Site 2

LIST OF FIGURES

Figure 1 – Site 2 and Site 3 Location Map
Figure 2 – Surface ACM Location Map – Site 2
Figure 3 – Soil Boring Location Map – Site 2
Figure 4 – Asbestos Content Location Map – Soil Boring Interval 1 (0-1') – Site 2
Figure 5 – Asbestos Content Location Map – Soil Boring Interval 2 (1-2') – Site 2
Figure 6 – Asbestos Content Location Map – Soil Boring Interval 3 (2-3') – Site 2
Figure 7 – Asbestos Content Location Map – Composite Overlay of Soil Boring Intervals 1 (0-1') and 2 (1-2') – Site 2
Figure 8 – Asbestos Content Location Map – Composite Overlay of Soil Boring Intervals 1 (0-1'), 2 (1-2') and 3 (2-3') – Site 2
Figure 9 – Inferred Areas of Asbestos Content Location Map – Soil Boring Interval 1 (0-1') – Site 2
Figure 10 – Inferred Areas of Asbestos Content Location Map – Soil Boring Interval 2 (1-2') – Site 2
Figure 11 – Inferred Areas of Asbestos Content Location Map – Soil Boring Interval 3 (2-3') – Site 2
Figure 12 – Inferred Areas of Asbestos Content Location Map – Composite Overlay of Soil Boring Intervals 1 (0-1') and 2 (1-2') – Site 2
Figure 13 – Inferred Areas of Asbestos Content Location Map – Composite Overlay of Soil Boring Intervals 1 (0-1'), 2 (1-2') and 3 (2-3') – Site 2
Figure 14 – Surface ACM Location Map – Site 3
Figure 15 – Soil Boring Location Map – Site 3
Figure 16 – Asbestos Content Location Map – Soil Boring Interval 1 (0-1') – Site 3
Figure 17 – Asbestos Content Location Map – Soil Boring Interval 2 (1-2') – Site 3
Figure 18 – Asbestos Content Location Map – Soil Boring Interval 3 (2-3') – Site 3
Figure 19 – Asbestos Content Location Map – Composite Overlay of Soil Boring Intervals 1 (0-1') and 2 (1-2') – Site 3
Figure 20 – Asbestos Content Location Map – Composite Overlay of Soil Boring Intervals 1 (0-1'), 2 (1-2') and 3 (2-3') – Site 3
Figure 21 – Inferred Areas of Asbestos Content Location Map – Soil Boring Interval 1 (0-1') – Site 3
Figure 22 – Inferred Areas of Asbestos Content Location Map – Soil Boring Interval 2 (1-2') – Site 3
Figure 23 – Inferred Areas of Asbestos Content Location Map – Soil Boring Interval 3 (2-3') – Site 3
Figure 24 – Inferred Areas of Asbestos Content Location Map – Composite Overlay of Soil Boring Intervals 1 (0-1') and 2 (1-2') – Site 3
Figure 25 – Inferred Areas of Asbestos Content Location Map – Composite Overlay of Soil Boring Intervals 1 (0-1'), 2 (1-2') and 3 (2-3') – Site 3
Figure 26 – Results of the Threatened and Endangered Plant Species Survey – Site 2
Figure 27 – Results of the Wetland Delineation – Site 2

LIST OF FIGURES (continued)

Figure 28 – Results of the Wetland Delineation – Site 3
Figure 29 – Inferred Areas of Asbestos Content Location Map – Composite Overlay of Soil Boring Intervals 1 (0-1'), 2 (1-2') and 3 (2-3'); Results of the Threatened and Endangered Plant Species Survey; Results of the Wetland Delineation – Site 2
Figure 30 - Inferred Areas of Asbestos Content Location Map – Composite Overlay of Soil Boring Intervals 1 (0-1'), 2 (1-2') and 3 (2-3'); Results of the Wetland Delineation – Site 3

1.1 Statement of Purpose and Scope of Work

Recent findings indicate the presence of asbestos containing material (ACM) at two sites (Site 2 and Site 3) located immediately adjacent to and south of the former JM Manufacturing Facility in Lake County, Waukegan, Illinois. In addition, it was reported that municipal waste and expended and unexpended small arms ammunition may be present at Site 2, which was used as a firing range during and after the 1959 Pan Am Games hosted by the City of Chicago. Concerns associated with the historic and present land use at these Sites necessitated the collection and analysis of soil samples to determine the presence of ACM, expended/unexpended lead shot and lead shavings and municipal waste at Site 2 and ACM at Site 3.

Per the attached letter, dated July 10, 1998 from Brad Bradley of the United States Environmental Protection Agency (USEPA), the USEPA, the Illinois Environmental Protection Agency (IEPA) and the Illinois Department of Natural Resources (IDNR) requested that conditions at these two Sites be characterized so that remediation options can be evaluated (Appendix A). The primary objective of the surface and subsurface characterization was to define the horizontal and vertical extent of ACM, lead shot and lead shavings and municipal waste on the surface and in the top three feet of soil of Site 2, and to define the horizontal and vertical extent of ACM on the surface and in the top three feet of soil of Site 3. These objectives were accomplished through a site surface inspection and grid-defined subsurface sampling and analysis plan. The purpose of the lead sampling was to determine the extent of lead in soil due to the accumulation of spent, and, perhaps unexpended small arms ammunition used at the firing range. Since there was evidence of a former municipal landfill located on Site 2, there was the possibility of finding municipal waste materials during subsurface sampling activities.

Additionally, a qualitative threatened and endangered plant species survey and a wetland delineation were performed within the boundaries of Site 2 and Site 3 to determine the presence of state-listed plant species and wetlands. This information will be useful in deciding which long-term management strategy will be best suited for both Sites from a natural resource perspective.

1.2 Surface and Subsurface Characterization Summary

Defoliating of Site 2 and Site 3 occurred so that all areas could be visually inspected. Subsequently, a surface inspection of both Sites occurred so that the horizontal extent of ACM could be delineated.

A total of 158 separate locations, encompassing both Sites 2 and 3, were found to contain surface ACM fragments or fragment clusters. A total of 84 separate locations contained ACM at Site 2, and a total of 74 separate locations contained ACM at Site 3. Each location was flagged and given a discreet surface ACM location identification number. All ACM fragments and fragment clusters were documented as to size and what type of material was found. Once the surface inspection was complete, a USEPA accredited/Illinois Department of Public Health (IDPH) Licensed Asbestos Worker properly handled and removed the surface ACM from Sites 2 and 3. The ACM was doubled bagged and deposited into an ACM secured containment area located on the property of the former Johns Manville (JM) Manufacturing Facility to

be disposed of at this facility at a later date according to all applicable rules and regulations.

Surveying activities began on December 9, 1998 and were completed on December 10, 1998. Activities included the creation of a 100'X100' grid to determine subsurface sampling locations at Site 2 and a 50'X50' grid to determine subsurface sampling locations at Site 3. These sampling points were then located by survey with respect to elevation and to North-South and East-West section lines. Additionally, all locations at which surface ACM was identified were located by survey with respect to elevation and to North-South and East-West section lines during this time period. A total of 75 subsurface sampling points were established after the creation of the grid at Site 2, and a total of 49 subsurface sampling points were established after the creation of the grid at Site 3.

On December 9, 1998, penetrating activities commenced on Sites 2 and 3 and concluded on December 14, 1998. Of the 75 sampling points established at Site 2, a total of 64 locations were penetrated to a depth of 4 feet to retrieve a representative core for soil core inspection. Also, of the 49 sampling points established at Site 3, a total of 48 locations were penetrated to a depth of four feet to retrieve a representative core for soil core inspection.

The soil core inspection process began on December 9, 1998 and concluded on December 15, 1998. At Site 2, a total of 206 one-foot soil core intervals (encompasses every one-foot interval inspected) were inspected for ACM, lead shot and lead shavings and municipal waste. There was visible evidence of ACM at a total of 36 one-foot intervals or 17.4%.

A total of 162 one-foot intervals were submitted for bulk asbestos analysis using the Polarized Light Microscopy (PLM) Method at Site 2. A total of 126 one-foot intervals were submitted for PLM analysis where no ACM was observed in the field during the soil core inspection. Of those 126 submitted intervals, 14 (or 11.1%) were positively identified as having some form of asbestos at a given quantity within the one-foot interval of soil. Of those 14, 1 (or 7.1%) contained an asbestos content greater than 1%. Additionally, at Site 2, a total of 36 one-foot intervals were submitted for PLM analysis where ACM was observed in the field during the soil core inspection for those intervals. Of those 36 submitted intervals, 35 or (97.2%) were identified as having some form of asbestos at a given quantity within the one-foot interval of soil. Of those 35, 22 (or 62.8%) contained an asbestos content greater than 1%.

At Site 3, a total of 168 one-foot soil core intervals (encompasses every one-foot interval inspected) were inspected for ACM. The inspection of soil for lead and municipal waste was not part of the scope of work for Site 3 and therefore no attempt was made to document this material. There was visible evidence of ACM at a total of 11 one-foot intervals or 6.5%.

A total of 154 one-foot intervals were submitted for bulk asbestos analysis using the PLM Method at Site 3. A total of 143 one-foot intervals were submitted for PLM analysis where no ACM was observed in the field during the soil core inspection. Of those 143 submitted intervals, 12 (or 8.3%) were positively identified as having some form of asbestos at a given quantity within the one-foot interval of soil. Of those 12, 1 (or 8.3%) contained an asbestos content greater than 1%. Additionally, at Site 3, a total of 11 one-foot intervals were submitted for PLM analysis where ACM was observed in the field during the soil core inspection for those intervals. Of those

11 submitted intervals, 11 or (100.0%) were identified as having some form of asbestos at a given quantity within the one-foot interval of soil. Of those 11, 8 (or 72.7%) contained an asbestos content greater than 1%.

During the subsurface characterization at Site 2, 71 soil samples were submitted for total lead analysis (Method 6010). Only one sample (B2-2a) exceeded the Tier 1 Soil Remediation Objective for Industrial/Commercial or Residential Properties for lead of 400 mg/kg. The total lead concentration of the sample at B2-2a was 831 mg/kg. The second highest total lead concentration at Site 2 was found at B2-16a, and the result was 149 mg/kg. The two samples with the highest total lead concentration (B2-2a and B2-16a) were submitted for TCLP Leachate Analysis (Method 1311/6010). B2-2a had a TCLP lead concentration of 2.7 mg/L and B2-16a had a TCLP lead concentration of 0.078 mg/L.

During the subsurface characterization, no municipal waste was identified beyond materials that would be expected in parking lots areas and vacant parcels.

1.3 Threatened and Endangered Plant Species Survey Summary

On August 2 and August 5, 1999, a qualitative threatened and endangered plant species survey was performed on Site 2 and Site 3. Three state-listed species were present within the boundaries of the surface and subsurface characterization at Site 2: *Ammophila breviligulata* (Marram Grass), *Chamaesyce polygonifolia* (Seaside Spurge), and *Cakile edentula* (Sea Rocket). The first two are currently Illinois State Endangered, while the third is Illinois State Threatened.

No state-listed plant species was found within the boundaries of the surface and subsurface characterization at Site 3.

1.4 Wetland Delineation Summary

On September 1, 1999, a wetland delineation was performed within the boundaries of Site 2 and Site 3. Five areas were delineated as "Man Induced" wetland and two areas were delineated as "Scrub-Shrub" wetland at Site 2. Additionally, a "Waters of the U.S." area was identified on the east side of Site 2 consisting of Lake Michigan and contiguous beachfront. Two areas were delineated as "emergent drainageways" on Site 3. It was estimated that there were approximately 3.5 total acres of wetland and "Waters of the U.S." within the boundaries of Site 2 and Site 3.

1.5 Conclusions

Surface ACM was located throughout Site 2 with the exception of the beachfront area east of the dune and on the southeast end of the Site (Figure 2 – Appendix L). This is consistent with reports that berms used during the Pam Am Games that consisted of ACM were leveled after the completion of the games. Visible ACM was removed from the Site during the surface characterization. However, ELM personnel have located small pieces of ACM on the Site since the completion of the surface inspection. As previously mentioned however, this ACM is in a non-friable form and is of little threat to human health or the environment.

There is little ACM at 0-3' bgs when the size of Site 2 and the number of soil sampling locations are taken into account. There is little to no ACM in the fishing

pier area and along the beach. Most of the ACM observed was located in the areas where the former berms were created and then subsequently leveled.

Surface ACM was located throughout Site 3 with the exception of the south-central portion of the Site. Historically, the former JM Administration Building parking lot was located on the northeast end of the Site. According to JM, the parking lot was constructed with materials containing ACM. Over a period of years during the use of the lot and during and after its demolition, ACM was distributed throughout the surrounding area. Visible ACM was removed from the Site during the surface characterization. However, ELM personnel have located small pieces of ACM on the Site since the completion of the surface inspection. As previously mentioned however, this ACM is in a non-friable form and is of little threat to human health or the environment.

There is little ACM at 0-3' bgs when the size of Site 3 and the number of soil sampling locations are taken into account. ACM in the subsurface was mostly concentrated in the area of the former parking lot. This is to be expected since the materials used to build the former parking lot contained ACM.

Of the 71 samples submitted for total lead analysis, one sample yielded at total lead concentration above The Tier 1 Soil Remediation Objective for Industrial/Commercial and Residential Properties for lead of 400 mg/kg. This concentration was 831 mg/kg at B2-2a. Since all of other samples were below the referenced threshold of 400 mg/kg, the distribution and potential impact of expended/unexpended lead shot and lead shavings at Site 2 were sufficiently addressed.

The soil samples from B2-2a and B2-16a (the two soil samples yielding the highest total lead concentration) were also submitted for TCLP analysis. The concentrations from the TCLP analysis were 2.7 mg/L and 0.078 mg/L, respectively. The soil sample from B2-2a exceeded the Soil Component of the Groundwater Ingestion Exposure Route Value for Class II groundwater of 0.1 mg/L. The concentration of 2.7 mg/L did exceed the established threshold. However, no remedial action is necessary as a result of this concentration because the drinking water source for the City of Waukegan is Lake Michigan. The City of Waukegan has entered into a Memorandum of Understanding with the IEPA that shows Waukegan has adopted an ordinance that effectively prohibits the installation or use of groundwater as a potable supply of water. Also, a concentration of 2.7 mg/L does not meet the characteristic of a hazardous waste based on the TCLP procedure. The criterion for lead to exhibit hazardous waste characteristics is 5.0 mg/L and is utilized for the purposes of removal and disposal of contaminated soil.

Three state-listed species were discovered within the boundaries of Site 2 (Marram Grass, Seaside Spurge and Sea Rocket). All sensitive species were concentrated on the east and southeast side of Site 2. All of the species are located in areas that are fences off to the public with the exception of Plots 1 – 4 (Figure 26 – Appendix L).

Results from the wetland delineation yielded seven separate wetlands within Site 2 and Site 3 with an approximate total acreage of 3.5. These wetlands are of low quality and most were more than likely created by the industrial activity that has taken place within the Sites over the course of the past 60 years (the "man-induced" wetlands of Site 2 and the emergent drainageways of Site 3.) Depressions, trenches and drainage ditches were created at these Sites while construction of various structures such as roads and buildings took place. As a result, evasive species, such

a common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*) and cattail (*Typha angustifolia*) were established in these impacted areas. Despite the poor quality of the wetlands, a permit to alter the wetlands in any way (fill, excavate, etc.) would more than likely require a permit.

2.1 Introduction

Concerns associated with the historic and present land use at Site 2 and Site 3, located immediately adjacent to and south of the former JM Manufacturing Facility in Lake County, Waukegan, Illinois, prompted the collection and analysis of soil samples to determine whether or not ACM, lead and municipal waste were present. The presence of ACM has been reported at Site 2 and Site 3. In addition, it was reported that municipal waste and expended/unexpended small arms ammunition may be present at Site 2, which was used as a firing range during and after the 1959 Pan Am Games hosted by the City of Chicago.

A letter, dated July 10, 1998 from Brad Bradley of the USEPA, described that the USEPA, the IEPA and the IDNR requested that conditions at Site 2 and Site 3 be characterized (Appendix A). The purpose of the characterization was aid in the long-term management decision making process for the two Sites. The primary objective of the surface and subsurface characterization was to define the horizontal and vertical extent of ACM, lead shot and lead shavings and municipal waste on the surface and in the top three feet of soil of Site 2. Also, to define the horizontal and vertical extent of ACM on the surface and in the top three feet of soil of Site 3. These objectives were accomplished through a site surface inspection and grid-defined subsurface sampling and analysis plan. The purpose of the lead sampling was to determine the extent of lead in soil due to the accumulation of spent, and, perhaps unexpended small arms ammunition used at the firing range. Since there was evidence of a former municipal landfill located on Site 2, there was the possibility of finding municipal waste during subsurface sampling activities.

Additionally, a qualitative threatened and endangered plant species survey and a wetland delineation were performed within the boundary lines of Site 2 and Site 3 to determine the presence of state-listed plant species and wetlands. This information will be useful in deciding what long-term management strategy will be best suited for both Sites from a natural resource perspective.

A Work Plan was written, under a separate cover, to detail all surface and subsurface characterization activities to be performed at Sites 2 and 3 (*Surface and Subsurface Characterization for Site 2 and Site 3 – Work Plan*, ELM Consulting, L.L.C., 1998). The Work Plan specified each Task to be completed and associated field testing procedures, sampling procedures and general health and safety precautions were included. Prior to the initiation of fieldwork, a detailed project Health and Safety Plan (HASP) was written, under a separate cover, detailing all personal protective equipment to be utilized in the field (*Surface and Subsurface Characterization for Site 2 and Site 3 – Health and Safety Plan*, ELM Consulting, L.L.C., 1998). Additionally, the HASP outlined all safety procedures required during the field effort to assure a safe working environment.

2.2 ACM Definition and Standard

The criteria for defining ACM for this project is consistent with the definitions provided in the Code of Federal Regulations, the Illinois Administrative Code, and previous studies conducted near the former JM Manufacturing Facility. The list of references is as follows:

- **Occupational Safety and Health Administration (OSHA) Regulations:**
  29 CFR 1926.1101 (b) Definitions

  "Asbestos-Containing Material (ACM) means any material containing **more than one percent** asbestos".

- 40 CFR 61.141 – Definitions

  "*Friable Asbestos Material* means any material containing **more than 1 percent** asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM".

  "*Nonfriable asbestos-containing material* means any material containing **more than 1 percent** asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure".

- Illinois Department of Public Health (IDPH)
  Asbestos Abatement for Public Schools and Private Schools and Commercial and Public Buildings in Illinois
  77 ILL. ADM. CODE 855.20 – Definitions

  "Asbestos Materials means any material or product that contains **more than 1% asbestos**".

This definition was utilized previously when, in 1998, it was discovered that asbestos-containing material was washing up on the shore of the Illinois Beach State Park (located north of the former JM Manufacturing Facility). In a news release by the IDPH (dated May 15, 1998), "Dr. John R. Lumpkin, state public health director, announced that, after a thorough analysis of Illinois Beach State Park air, water and sand for possible asbestos contamination, it has been determined the popular recreation area is safe for public use". An independent contractor collected approximately 200 air, water and sand samples in March, and results were reviewed by representatives of IDPH, IDNR and the IEPA (Appendix B).

According to the news release, "since no standards have been established for outdoor exposure to asbestos, strict federal indoor standards for schools were applied to the sand samples that were positive for asbestos. **The asbestos content of the positive samples was less than 1 percent, the level of concern for asbestos in an enclosed classroom. The USEPA states that only material containing greater than 1 percent asbestos is considered asbestos-containing material"** (Appendix B). Because this standard of less than or greater than one percent asbestos was used with this particular study and other studies related to asbestos contamination the region, the same standard was used for the surface and subsurface characterization at Site 2 and Site 3.

3.1 Regional Location

The JM Manufacturing Facility and Site 2 and Site 3 are located in northeast Illinois adjacent to Lake Michigan in Waukegan, Lake County, Illinois. The properties lie along an industrial corridor adjacent to Lake Michigan with a mixture of heavy and light industry and residential and commercial areas surrounding the sites. The Illinois Beach State Park is located to the north of the properties. The following sections describe the site boundaries, the physiography and former/current land use of each property.

3.2 Site Boundaries, Physiography and Land Use

3.2.1 Former JM Manufacturing Facility Description

The former JM Manufacturing Facility is located in Waukegan, Illinois (Waukegan Township; Section 10, Township 45N, Range 12E) along Lake Michigan in East-Central Lake County (Figure 1). According to Mr. Denny Clinton of JM, the facility operated as a manufacturing plant that produced shingles and roofing materials, transite pipe, piping insulation, gaskets and similar materials containing asbestos. The facility started manufacturing operations in the 1920's and ceased production in July of 1998. Currently, there are no operations being performed on the property and demolition of the facility is underway. The facility covers approximately 350 acres of land owned by JM (Figure 1). The facility is approximately 35 miles north of downtown Chicago, Illinois and is along an industrial corridor between the City of Waukegan and Lake Michigan. The Illinois Beach State Park is located north of the facility and a Commonwealth Edison coal burning plant is located to the south. To the east is Lake Michigan and to the west is mixed forest habitat, a residential area and Bowen Park. The mean sea level (msl) adjacent to the facility is 590 and the msl of Lake Michigan adjacent to the facility is also 590 (U.S.G.S. topographic map, Zion Quadrangle, 1993).

3.2.2 Site 2 Description

The area designated by the USEPA as Site 2 is an area located south of the southeast corner of the JM property (Waukegan Township; Section 15, Township 45N, Range 12E) (Figure 1). The Site is situated primarily on City of Waukegan property (easterly extension of Greenwood Avenue right-of-way), and is currently managed by the IDNR as an access to the Commonwealth Edison fishing pier. A shooting range was constructed on Site 2 in 1959, in conjunction with the Pan Am Games that were hosted by the City of Chicago in that year. Under the guidance of the U.S. Army, a series of berms were constructed on the Site to prevent fired rounds from leaving the range and traveling onto adjacent properties. Site 2 is oriented east to west, extends from the southern boundary of the JM property line in a southerly direction for a distance of approximately 250 to 400 feet, and from the Lake Michigan shoreline approximately 1,500 feet in a westerly direction (Figure 1). The msl adjacent to Site 2 is 590 (U.S.G.S. topographic map, Zion Quadrangle, 1993). Photographs of Site 2 were taken during the project and are located in Appendix C.

3.2.3 Site 3 Description

The area designated by the USEPA as Site 3 is located on the southeast corner of Greenwood Avenue and Pershing Road and aligned with the west end of the former JM Administration building at the southern end of the JM property (Waukegan Township; Section 15, Township 45N, Range 12E) (Figure 1). This area is approximately 200 feet in the north-south dimension and 400 to 500 feet in the east-west dimension, with the northern boundary of Site 3 beginning at the south edge of the pavement of Greenwood Avenue (Figure 1). The msl adjacent to Site 3 is 590 (U.S.G.S. topographic map, Zion Quadrangle, 1993). This property is currently owned by Commonwealth Edison and was formerly utilized as a parking area for the former JM Administration Building. Historical aerial photographs indicate that pipes were used in the parking area to aid in determining parking spaces. Additionally, various other potential ACM was identified on the Site according to the photographs. Photographs of Site 3 were taken during the project and are located in Appendix C.

4.0 REGULATORY ACTIVITIES

According to JM, prior to the commencement of fieldwork for this project, recent findings had indicated the presence of ACM at Site 2 and Site 3. While ongoing monitoring of the asbestos landfill is occurring within the boundaries of the former manufacturing facility, regulatory agencies also requested the characterization of additional sites outside the boundaries of the manufacturing facility. As a result, the USEPA, the IEPA and the IDNR ("the agencies") requested that conditions at Site 2 and Site 3 be characterized so that long term management strategies could be evaluated.

In a letter from Mr. Brad Bradley of the USEPA to Mr. Denny Clinton of JM, the agencies reported that they had "reviewed the April 3, 1998, 'Characterization Plan for Additional Sites' for the Johns-Manville Site in Waukegan, Illinois and hereby provide approval" with certain modifications described in the letter (Appendix A). Site 2 modifications included:

- The creation of a 100'X100' grid and soil sampling shall be conducted at the points of intersection of the grid;
- Borings shall be made at one foot depth intervals to a total depth of three feet at each sampling location;
- Soil samples shall be visually inspected;
- Bulk asbestos analysis shall be conducted on soil samples with no visible ACM;
- The top interval at each sampling location shall be analyzed for total lead and the two samples with the greatest quantity of lead debris shall be submitted for TCLP analysis.

Site 3 modifications included:

- The creation of a 50'X50' grid and soil sampling shall be conducted at the points of intersection of the grid;
- Borings shall be made at one foot depth intervals to a total depth of three feet at each sampling location;
- Soil samples shall be visually inspected;
- Bulk asbestos analysis shall be conducted on soil samples with no visible ACM.

The complete scope of work is described in Section 5 of this report. The JM scope of work for the surface and subsurface characterization was approved by the agencies and is described in detail in "Exhibit A-2, Specification for Surface and Subsurface Characterization of Site 2-Former Pan Am Games Shooting Range and Site 3 – Former JM Parking Area" (Appendix D).

Initially, the scope work for the surface and subsurface characterization was generated by JM excluding the threatened and endangered plant species survey and the wetland delineation of Sites 2 and 3. This scope of work is described in Appendix D under "Exhibit A-2, Specification for Surface and Subsurface Characterization of Site 2-Former Pan Am Games Shooting Range and Site 3 – Former JM Parking Area". Additionally, ELM drafted a work plan, under a separate cover, that detailed all activities excluding the threatened and endangered plant species survey and the wetland delineation of Sites 2 and 3 (*Surface and Subsurface Characterization for Site 2 and Site 3 – Work Plan*, ELM Consulting, L.L.C., 1998). The threatened and endangered plant species survey and the wetland delineation were added to the existing scope of work after the completion of the surface and subsurface characterization as volunteer action on the part of JM. A brief summary of each of the tasks involved in the surface and subsurface characterization, the qualitative threatened and endangered plant species survey and the wetland delineation of Sites 2 and 3 is provided below. An extensive summary and associated findings of each task are described in Section 6.

The scope of work for the surface and subsurface characterization, the qualitative threatened and endangered plant species survey and the wetland delineation of Sites 2 and 3 involved the following activities:

Task 1 - Defoliation of Site 2 and Site 3;

Task 2 - Inspection of Site 2 and Site 3 for Surface ACM;

Task 3 - Establish Grids for Sites 2 and 3 to Determine Subsurface Soil Sampling Points;

Task 4 – Subsurface Soil Sampling;

Task 5 – Soil Core Inspection of Site 2;

Task 6 – Soil Core Inspection of Site 3;

Task 7 – Qualitative Threatened and Endangered Plant Species Survey of Site 2 and Site 3; and

Task 8 – Wetland Delineation Performed on Site 2 and Site 3.

5.1 Defoliation of Site 2 and Site 3

To allow for the greatest accessibility to surface and subsurface areas, Site 2 and Site 3 were defoliated with mowers. As a result of the defoliation process, all areas of Site 2 and Site 3 that were accessible by a mower were exposed to allow field personnel to visually inspect the Sites.

5.2 Inspection of Site 2 and Site 3 for Surface ACM

To determine the spatial distribution of ACM on the surface of Sites 2 and 3, a visual inspection of all areas of the Sites was conducted. Once surface ACM was located, the material was documented as to the type of ACM, size, number of pieces of material and the location was flagged for survey purposes. Once the location was

flagged, the material was collected and transported to the former JM Manufacturing Facility for proper storage and disposal.

5.3 Establish Grids for Sites 2 and 3 to Determine Subsurface Soil Sampling Points

A 100'X100' grid was established on Site 2 so that random sampling points could be created at the intersection of the grid lines. Once the grid was established, each sampling point was surveyed as to elevation and location with regard to site boundaries.

A 50'X50' grid was established on Site 3 so that random sampling points could be created at the intersection of the grid lines. Once the grid was established, each sampling point was surveyed as to elevation and location with regard to site boundaries.

5.4 Subsurface Soil Sampling

To determine the presence of ACM in the subsurface, soil samples were collected along the established grid layout at Sites 2 and 3. Each soil boring was penetrated to a depth of four feet utilizing Geoprobe® equipment. Once a soil column was collected, it was taken to a laboratory room inside the former JM Manufacturing Facility for storage.

5.5 Soil Core Inspection of Site 2

Once soil samples were collected from Site 2, the four-foot soil column was divided into one-foot sections and visually inspected for ACM. Though there was a four-foot column of soil collected per sampling location, only the first three one-foot intervals were visually inspected as required by the USEPA. If ACM was visually identified within a one-foot section, the material was documented as to the type of ACM, size, number of pieces of material and from what location the soil sample was derived. If ACM was visually identified, then no one-foot interval was submitted for PLM analysis from that sampling location. If no ACM was identified within any of the three one-foot intervals, then all three one-foot intervals were submitted for PLM analysis from that sampling location. All ACM that was visually identified was submitted for PLM analysis to confirm the presence of asbestos within the material.

In addition to the visual inspection for ACM at Site 2, each soil interval was inspected for expended/unexpended lead shot and lead shavings as well as municipal waste. Also, a soil sample was collected from the uppermost interval (0-1') and submitted for total lead analysis (Method 6010). The two soil samples that recorded the highest total lead concentration were then submitted for TCLP lead analysis. The result from the TCLP lead analysis describes whether the lead concentration in the soil shows characteristics of a hazardous waste for the purposes of removal and disposal.

5.6 Soil Core Inspection of Site 3

Once soil samples were collected from Site 3, the four-foot soil column was divided into one-foot sections and visually inspected for ACM. Though there was a four-foot column of soil collected per sampling location, only the first three one-foot intervals

were visually inspected as required by the USEPA. If ACM was visually identified within a one-foot section, the material was documented as to the type of ACM, size, number of pieces of material and from what location the soil sample was derived. If ACM was visually identified, then no one-foot interval was submitted for PLM analysis from that sampling location. If no ACM was identified within any of the three one-foot intervals, then all three one-foot intervals were submitted for PLM analysis from that sampling location. All ACM that was visually identified was submitted for PLM analysis to confirm the presence of asbestos within the material.

5.7 Qualitative Threatened and Endangered Plant Species Survey of Site 2 and Site 3

To determine the presence of state-listed threatened and endangered plant species within the boundaries of Site 2 and Site 3, a qualitative plant species survey was conducted. All areas of Site 2 and Site 3 were visually inspected for Illinois listed threatened or endangered plants and associated indicator species.

5.8 Wetland Delineation of Site 2 and Site 3

To determine the presence of wetlands within the boundaries of Site 2 and Site 3, a wetland delineation was performed on both Sites. Field personnel visually inspected the Sites for hydrophytic vegetation, characteristics of Site hydrology and collected soil samples to determine the presence of hydric soils. Additionally, wetland inventory maps from several sources were reviewed to determine the historic presence of wetlands in the area.

5.9 Contractor Information

Table 1 summarizes the contractors that assisted ELM with the surface and subsurface characterization, qualitative threatened and endangered plant species survey and the wetland delineation. The contractors are listed in alphabetical order by company or proper name.

Table 1. List of Contractors

Name	Address and Telephone Number	Area of Assistance
Christopher B. Burke Engineering, LTD	9575 West Higgins Road Suite 600 Rosemont, Illinois 60018 847-823-0500	Wetland Delineation
Daniel Creaney Company	450 Skokie Blvd. Suite 105 Northbrook, Illinois 60062 847-480-5757	Creation of 100'X100' and 50'X50' subsurface sampling grids; surveying activities
Kindergarden Drawing, Inc.	1424 Yorkshire Dr. Streamwood, Illinois 60107 630-837-8851	CADD Drawings (Figure 1-Figure 30)
Ms. Margo Milde	847-724-4716	Field Ecologist-Threatened and Endangered Plant Species Survey
RCM Laboratories	5400 East Avenue Countryside, Illinois 60525 708-485-8600	Handling and disposal of surface ACM, inspection of soil for ACM, PLM analysis, on-site air sampling for friable asbestos
Severn Trent Laboratories (formerly RECRA LabNet)	2417 Bond Street University Park, Illinois 60466 708-534-5200	Total lead/TCLP lead analysis
Signature Landscaping	855 Skokie Valley Road Lake Bluff, Illinois 60044-1830 847-234-3333	Defoliating activities
Terra-Trace Environmental Services	15 Cornell Drive Lincolnshire, Illinois 60069 847-945-6118	Soil sample collection using Geoprobe® equipment

6.0 DOCUMENTATION OF FIELD ACTIVITES

The following subsections describe each task that was completed to fulfill the requirements under the scope of work for the surface and subsurface characterization, the qualitative threatened and endangered plant species survey and the wetland delineation performed with the boundaries of Site 2 and Site 3. A detailed explanation of the results of each task is also provided.

6.1 Defoliation of Site 2 and Site 3

To allow for the greatest accessibility to surface and subsurface areas, Site 2 and Site 3 were defoliated on December 2, 1998 through December 4, 1998 by Signature Landscaping of Lake Bluff, Illinois. The ground surface at Site 2 consisted of various types of features including asphalt and gravel paved roads, the concrete foundation to the former shooting range building, beach front sand, thick, woody vegetation, patches of hydrophytic vegetation, and areas with both tall and short grasses. The ground surface at Site 3 also consisted of various types of features including one dirt road and one gravel-paved parking area, thick, woody vegetation, patches of hydrophytic vegetation, and areas with both tall and short grasses. All areas within Sites 2 and 3, that were accessible by a mower, were mowed by a *Woods* Triple-Deck Mower and a five-foot flail mower. The grass/weed line was cut to a length of four to six inches above grade. Areas within Site 2 that were not mowed included all stands of hydrophytic vegetation (i.e., cattails – *Typha angustifolia*, purple loosestrife – *Lythrum salcaria* and common reed - *Phragmites australis*), heavy woody vegetation and along sensitive dune areas where at least one state-endangered dune plant species (Marram Grass – *Ammophila breviligulata*) was discovered during pre-surface and subsurface characterization due diligence activities. Areas within Site 3 that were not mowed included all stands of hydrophytic vegetation (i.e., cattails – *Typha* sp.) and heavy woody vegetation. Photographs showing the defoliating process of Site 2 and Site 3 are located in Appendix C (Photograph #1 and Photograph #2).

To verify that there was no friable asbestos in the breathing zone, an USEPA accredited/IDPH Licensed Air Sampling Professional from RCM Laboratories, Countryside, IL, was on-site for the first day of defoliating activities to evaluate the potential friability of asbestos. The Air Sampling Professional analyzed an air monitoring device (Gilian low volume personal sampling pump with mixed cellulose ester filter) that was attached to the tractor as defoliating activities occurred. After approximately two hours of field operations, the sample was analyzed on-site by Phase Contrast Microscopy, National Institute of Occupational Safety and Health (NIOSH) Method 7400, and the sample was below the Permissible Exposure Limit (PEL) of 0.1 fiber/cc. The Negative Exposure Assessment (which describes friable asbestos air monitoring activities), the result from the analysis of this air monitoring device and the Certificate of Accreditation of RCM Laboratories are located in Appendix E.

6.2 Inspection of Site 2 and Site 3 for Surface ACM

Concurrent with the defoliating activities on Sites 2 and 3, ELM began the inspection for surface ACM at both Sites. The inspection process started on December 2, 1998 and ended on December 4, 1998. Two ELM professionals and one USEPA accredited/IDPH Licensed Asbestos Worker conducted the surface inspection.

Despite the fact that both Sites were mowed and clippings were left on the ground surface, most areas of the Sites were exposed sufficiently enough to allow for thorough visual inspection. However, to aid in the inspection of surface ACM in areas where large accumulations of cut grasses and weeds occurred, workers from Signature Landscaping used blowers to clear the ground surface. All areas of Site 2 and Site 3 were inspected with the exception of the patches of hydrophytic vegetation located on Site 2 (cattails - *Typha angustifolia*, purple loosestrife – *Lythrum salcaria* and common reed - *Phragmites australis*) and the patches on Site 3 (*Typha* sp. cattails). As the three inspectors walked the Sites, all ACM fragments and fragment clusters found on the surface were flagged, marked, located by survey with respect to elevation and North-South and East-West section lines, and identified and recorded as to size and type of fragment by ELM professionals (Appendix F). In general, surface ACM included non-friable asbestos-cement board (transite), non-friable bituminous roofing materials and non-friable asbestos-ore type materials. Each location where surface ACM was discovered was given a unique identification number. As indicated in Appendix F, surface ACM location identification numbers show the Site from which the fragment or fragment cluster was found (i.e., Site 2 or Site 3) and a given number in sequence. For example, if an ACM fragment was found on Site 2 and it was the eleventh fragment/cluster discovered, then the location identification number read "2-11". All ACM fragments and fragment clusters were located by survey. The survey was performed by Daniel Creaney Company of Northbrook, Illinois. After all inspection and documentation activities were completed, the Licensed Asbestos Worker removed all surface ACM and deposited the material into double polyurethane bags. All surface ACM was properly handled and removed off of Sites 2 and 3. The bags were deposited into a secured containment area within the former JM Manufacturing Facility to be held for proper disposal according to all applicable laws and regulations at a future date to be determined. Photographs showing the inspection of Site 2 and Site 3 for surface ACM are located in Appendix C (Photograph #3 and Photograph #4).

A total of 158 separate locations, encompassing both Sites 2 and 3, contained surface ACM fragments or fragment clusters. A total of 84 locations were contained surface ACM at Site 2. Fragment and fragment clusters were distributed throughout most of the surface of Site 2 (Figure 2). Areas where little to no ACM was observed included the east end of the Site (beachfront and beach proper), the southeast end of the Site (not located within the Commonwealth Edison fishing pier area) and the parking area for the Commonwealth Edison fishing pier. A greater density of surface ACM was observed west of the parking lot and adjacent to the Commonwealth Edison outfall at the southeast corner of the Site (Figure 2).

A total of 74 locations were found to contain surface ACM at Site 3. Fragment and fragment clusters were distributed throughout the surface of Site 3 with the exception of the south central end of the property along the southern boundary line (Figure 14).

A USEPA accredited/IDPH Licensed Air Sampling Professional from RCM Laboratories assessed the operations of the surface ACM inspection process to determine whether personal protective equipment was necessary to perform inspection activities. Because the ACM being removed from the two Sites were not damaged so as to render the material non-intact, workers would not be exposed to asbestos fibers at or above the PEL of 0.1fiber/cc. Therefore, no respiratory protection was required. A Negative Exposure Assessment describing the Air Sampling Professional's assessment of the surface inspection process is located in Appendix E.

6.3 Establish Grids for Site 2 and Site 3 to Determine Sampling Points

For the purposes of determining subsurface sampling points, a 100' x 100' grid was established within Site 2. The grid was created by Daniel Creaney Company. Exact dimensions of the grid were adjusted in the field to reflect major site features (fences, trees, power poles, wet areas, etc.) and suspected concentrations of ACM. A total of 75 sampling locations were established using the 100' x 100' grid system (Figure 3).

Similarly, a 50' x 50' grid was established within Site 3. Exact dimensions of the grid were adjusted in the field to reflect major site features and suspected concentrations of ACM. A total of 49 sampling locations were established using 50' x 50' grid system (Figure 15). The layout of the respective grids was determined by JM to account for known or suspected areas of ACM. Sampling grids were surveyed on December 9 and 10, 1998. Photographs showing the creation of sampling grids at Site 2 and Site 3 are located in Appendix C (Photograph #5 and Photograph #6).

6.4 Subsurface Soil Sampling

Soil sampling was conducted on Sites 2 to determine the presence of ACM, expended/unexpended lead shot and lead shavings and municipal waste. The subsurface strata targeted for inspection included the zone from the ground surface to three feet below ground surface (bgs). Similarly, the top three feet of soil was targeted for ACM inspection at Site 3. Soil sampling was conducted on December 9 through December 14, 1998. All penetrating activities were preformed by Terra-Trace Environmental Services of Lincolnshire, Illinois using an ATV-mounted hydraulic soil probe (Geo-Probe® Method).

As the soil probe began to perform penetrating activities closer to the beach on the east side of Site 2, it was discovered that the Geo-Probe method was not allowing for full recovery of soil within the sampling core because of unconsolidated sandy soils that were the predominate soil type in the area. Multiple samples had only two feet or less of sample recovery. As a result, a split-spoon penetrating apparatus with a "catch-tube" was used near the beach to enhance recovery. However, this method was yielding low recovery as well. It was decided in the field that all four-foot sampling cores having two-feet or less of recovery would be re-penetrated to obtain at least a three-foot soil sample. When this was not accomplished, then the field operators penetrated the four foot sampling core to either five or six feet to recover at least a three foot sample. Therefore, several cores that were obtained during the subsurface characterization were a composite sample to five or six feet. This included several samples at Site 3 that yielded two-feet of soil or less. There were a total of 19 locations at Site 2 where a soil core was composted to either 5 or 6 feet. There were a total of 10 locations at Site 3 where a soil core was composted to either 5 or 6 feet (Appendix G). A photograph showing subsurface soil sampling is located in Appendix C (Photograph #7).

As indicated in Appendix G, the word "REDO" appears next to various boring identification numbers. This indicates that the initial sample core only had two feet of soil recovery or less. Those samples, with two feet of recovery or less, were re-penetrated to achieve at least three feet of soil. At Site 2, a total of 71 soil cores were penetrated for the inspection of ACM, expended/unexpended lead shot and lead shavings and municipal waste (regardless of the amount of recovery). At Site 3, a total of 60 soil cores were penetrated for inspection of ACM (regardless of the amount of recovery). A total of seven locations were re-penetrated (REDOs) to

achieve a better recovery at Site 2. A total of 12 locations were re-penetrated (REDOs) to achieve a better recovery at Site 3.

General observations were made while conducting the subsurface characterization including general soil types and descriptions. Refer to Appendix H for all boring logs. No groundwater was encountered at any sampling location during penetrating activities.

For health and safety purposes, a Licensed Asbestos Inspector from RCM Laboratories was on-site during penetrating activities to monitor the breathing zone for friable asbestos. The Licensed Asbestos Inspector analyzed an air monitoring device (Gilian low volume personal sampling pump with mixed cellulose ester filter) that was attached to the ATV-mounted soil probe as penetrating activities occurred. After 325 minutes of field operations, the sample was analyzed on-site by Phase Contrast Microscopy, NIOSH Method 7400, and a PEL of 0.11 fiber/cc was detected. However, it was the judgement of the Licensed Asbestos Inspector that workers operating the drilling rig were not exposed to asbestos fibers at or above the PEL of 0.1 fiber/cc due to the nature of the material present and wet conditions due to past weather events. The Negative Exposure Assessment (which describes friable asbestos air monitoring activities) and the result from the analysis of this air monitoring device are located in Appendix E.

6.5 Soil Core Inspection of Site 2

Concurrent with and after subsurface sampling activities, soil cores from Site 2 were inspected, at one-foot intervals, for the presence of ACM, expended/unexpended lead shot and lead shavings and municipal waste. As each four-foot, polybutyrate sample liner was removed from the subsurface, it was taken from Site 2 to a laboratory area within the former JM Manufacturing Facility. A portion of the liner was removed to expose the soil sample for inspection. The sample was then divided into one-foot intervals and visually inspected by hand physically sifting through sand or breaking apart silty clay.

To avoid creating dust particles while inspecting the cores, each sample interval was inspected by hand. As each liner was opened, the soil and breathing zone were monitored for Volatile Organic Compounds (VOCs) using an Organic Vapor Monitor (OVM). No readings of possible vapors were detected in the air adjacent to the soil or breathing zone in any of the samples inspected at Site 2. A photograph showing the soil core inspection process for Site 2 is located in Appendix C (Photograph #8). The following information details how ACM, expended/unexpended lead shot and lead shavings and municipal waste was sampled and analyzed.

6.5.1 Inspection of Soil Cores for Asbestos Containing Material

During the inspection of soil cores in the field, if any one-foot boring interval contained visible ACM, bulk asbestos analysis was conducted on those fragments suspected of being ACM for that boring interval. If no one-foot boring interval contained visible ACM, then all three boring intervals at that boring location were analyzed for bulk asbestos. All three intervals were submitted for PLM analysis under this scenario to verify that no ACM was missed by visual inspection. RCM Laboratories provided a USEPA accredited/IDPH Licensed Asbestos Inspector to perform a visual inspection and material sampling of suspect ACM along with ELM professionals during the inspection of all soil cores from Site 2. Samples that were

derived from a soil core where no boring interval contained visible ACM were placed in 50-gram plastic blood vials for transport to the laboratory. These samples were analyzed according to the USEPA recommended PLM method. Analyses were conducted at RCM's in-house National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory. For Certificates of Accreditation for RCM Laboratories, refer Appendix E. When visible ACM was identified at a given one-foot interval during the soil core inspection in the field, the suspect ACM was placed into a ziplock bag and properly labeled. Additionally, if no ACM was observed in any of the one-foot intervals, each one-foot interval was placed in a separate ziplock bag and properly labeled. All ziplock bags containing one-foot intervals of soil where no ACM was observed and one-foot intervals where ACM was observed were archived and placed in labeled coolers for storage. Once all final reports have been written and reviewed by all concerned parties and the project has been completed, JM will dispose of the one-foot soil intervals according to all applicable laws and regulations. Until the project is complete, ELM will maintain possession of the coolers. As a result of this method of sampling, archiving and sample storage, all soil collected during the subsurface characterization was deposited into ziplock bags and stored in coolers. No soil from the subsurface characterization remained at the former JM Manufacturing Facility that required disposal.

As indicated in Appendix E, asbestos content, non-asbestos fibrous components and non-fibrous components were estimated for each sample submitted for PLM analysis. Each sample was given a unique identification number. For example, B2-03 (0-1') represents:

- a sample retrieved from a soil boring ("B");
- at Site 2 ("2");
- at the third boring location penetrated (03);
- at the 0-1' soil core interval.

This type of description was used to describe a sample retrieved from a sampling location where visible ACM was observed and no visible ACM was observed in any of the one-foot interval. Additionally, AB2-01 (1-2') represents:

- a sample retrieved from a soil boring ("B");
- at Site 2 ("2");
- at the first boring location penetrated (01);
- at the 1-2' soil core interval;
- "A" denotes that this was a sample where visible ACM was observed at the 1-2' soil core interval and the ACM fragment/fragments were submitted for PLM analysis.

For a summary of the PLM analysis results from Site 2, refer to the summary table in Appendix E.

To confirm or deny the presence of friable asbestos in the breathing zone during soil core inspection, a Licensed Asbestos Inspector from RCM Laboratories analyzed a worker-monitoring device (Gilian low volume personal sampling pump with mixed cellulose ester filter) that was placed in the laboratory on the first day of soil core inspections. The sample was analyzed on-site by Phase Contrast Microscopy, NIOSH Method 7400, and the sample result was below the PEL of 0.1 fiber/cc. The result from the analysis of this air-monitoring device is located in Appendix E.

A summary of data collected during the subsurface characterization at Site 2 is as follows:

SUBSURFACE PENETRATING ACTIVITY

Total number of soil boring locations where soil was collected for ACM inspection...	**64**
Total number of soil boring locations re-penetrated because of two or more feet of the sample core contained no recovery (i.e., REDOs) (B-54 was counted as a REDO twice)...	**7**
Total number of four-foot cores penetrated and inspected regardless of the amount of recovery...	**71**
Number of four-foot cores where ACM was visually identified at any interval (includes the initial cores where there were two feet of no recovery or less plus all accompanying REDOs which totals 71 cores)...	**28 or 39.4%**

FIELD INSPECTIONS

Total number of one-foot intervals field inspected for ACM (including all one-foot intervals where the four-foot soil core contained two feet of no recovery plus all REDOs)...	**206**
Total number of one-foot intervals where ACM was visually identified (including all one-foot intervals where the four-foot soil core contained two feet of no recovery plus all REDOs which yields a total of 206 one-foot intervals)...	**36 or 17.4%**

VISUAL ACM IDENTIFICATION AT EACH INTERVAL

Total number of times when ACM was visually identified in the field at the 0-1′ interval with a total of (71) 0-1′ intervals recovered and inspected including REDOs...	**4 or 5.6%**
Total number of times when ACM was visually identified in the field at the 1-2′ interval with a total of (71) 1-2′ intervals recovered and inspected including REDOs ...	**15 or 21.1%**
Total number of times when ACM was visually identified in the field at the 2-3′ interval with a total of (64) 2-3′ intervals recovered and inspected including REDOs ...	**17 or 26.5%**

NUMBER OF ONE-FOOT INTERVALS SUBMITTED FOR PLM ANAYLSIS

Total number of one-foot intervals submitted for PLM analysis (includes all REDOs and all one-foot intervals where ACM was visually identified in the field)...	**162**
Total number of one-foot intervals submitted for PLM analysis where no ACM was observed in the field during the soil core inspection (includes all REDOs)...	**126**
Of the total number of one-foot intervals submitted for PLM analysis where no ACM was observed in the field during the soil core inspection (which yields a total of 126 one-foot intervals), how many contained some form of asbestos at any quantity (includes all REDOs)...	**14 or 11.1%**

Of the total number of one-foot intervals submitted for PLM analysis where no ACM was observed in the field during the soil core inspection and contained some form of asbestos at any quantity (which yields a total of 14 one-foot intervals), how many contained an asbestos content greater than 1%...	**1 or 7.1%**

PLM ANALYSIS CONFIRMATION

Total number of one-foot intervals submitted for PLM analysis where ACM was observed in the field during the soil core inspection (includes all REDOs)...	**36**
Of the total number of one-foot intervals submitted for PLM analysis where ACM was observed in the field during the soil core inspection (which yields a total of 36 one-foot intervals), how many contained some form of asbestos at any quantity (includes all REDOs)...	**35 or 97.2%**
Of the total number of one-foot intervals submitted for PLM analysis where ACM was observed in the field during the soil core inspection and contained some form of asbestos at any quantity (which yields a total of 35 one-foot intervals), how many contained an asbestos content greater than 1%...	**22 or 62.8%**

RESULTS OF PLM ANALYSIS OF THE 0-1' INTERVAL

Total number of times when ACM was identified at any quantity, during PLM analysis, at the 0-1' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [47] 0-1' intervals)...	**7 or 14.8%**
Of the total number of times when ACM was identified at any quantity, during PLM analysis, at the 0-1' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [7] 0-1' intervals), how many contained an asbestos content greater than 1%...	**4 or 57.1%**

RESULTS OF PLM ANALYSIS OF THE 1-2' INTERVAL

Total number of times when ACM was identified at any quantity, during PLM analysis, at the 1-2' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [59] 1-2' intervals)...	**20 or 33.8%**
Of the total number of times when ACM was identified at any quantity, during PLM analysis, at the 1-2' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [20] 1-2' intervals), how many contained an asbestos content greater than 1%...	**10 or 50.0%**

RESULTS OF PLM ANALYSIS OF THE 2-3' INTERVAL

Total number of times when ACM was identified at any quantity, during PLM analysis, at the 2-3' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [56] 2-3' intervals)...	**22 or 39.2%**

Of the total number of times when ACM was identified at any quantity, during PLM analysis, at the 2-3′ interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [22] 2-3′ intervals), how many contained an asbestos content greater than 1%...	**9 or 40.9%**

6.5.2 Description of Site 2 Figures

Figures 4,5,6,7 and 8 describe the spatial and vertical distribution of ACM and the associated asbestos content found at Site 2.

Figure 4 shows that of the 47 (0-1′) soil sample intervals submitted for PLM analysis, seven contained some form of asbestos (four had an asbestos content greater than 1% and three had asbestos content less than 1%). No asbestos was detected in 40 of the 47 samples. Samples from the 0-1′ interval containing some form of asbestos were distributed in limited areas throughout the Site with the exception of the southeast portion near the beach.

Figure 5 shows that of the 59 (1-2′) soil sample intervals submitted for PLM analysis, 20 contained some form of asbestos (10 had an asbestos content greater than 1% and 10 had asbestos content less than 1%). No asbestos was detected in 39 of the 59 samples submitted for analysis. Samples from the 1-2′ interval containing some form of asbestos were concentrated on the west side of Site 2 and along JM's north-south fence line on the east side of the Site while little to no asbestos was detected in samples from the fishing pier area or from the east/southeast portion of the Site.

Figure 6 shows that of the 56 (2-3′) soil sample intervals submitted for PLM analysis, 22 contained some form of asbestos (9 had an asbestos content greater than 1% and 13 had asbestos content less than 1%). No asbestos was detected in 34 of the 56 samples submitted for analysis. Samples from the 2-3′ interval containing some form of asbestos were concentrated on the west side of Site 2 and along JM's north-south fence line on the east side of the Site while no asbestos was detected in samples from the fishing pier area or from the east/southeast portion of the Site.

Figure 7 is a composite overlay of soil boring intervals 0-1′ and 1-2′ and Figure 8 is a composite overlay of soil boring intervals 0-1′, 1-2′ and 2-3′. These two figures give a visual summary of the spatial and vertical extent of asbestos found in all of the soil samples submitted for PLM analysis at Site 2. In general, these two figures show that ACM was detected at Site 2 above and below the 1% threshold and from the 0-3′ soil interval on the west side of the Site and also along JM's north-south fence line on the east side of the Site. Little to no asbestos, at any content, was detected within the fishing pier area or along the east/southeast portion of the Site.

Figures 9, 10, 11, 12 and 13 summarize the inferred areas of ACM distribution at Site 2. If a sampling location yielded a soil interval (0-1′, 1-2′ or 2-3′) with a detected amount of ACM, it was then inferred that the ACM was distributed, within that given interval, half the distance to the next nearest sampling location. For example, as shown in Figure 9, ACM was detected at a content of greater than 1% at the 0-1′ soil interval at sampling location B2-9. As a result, it is inferred that there is ACM at a content of greater than 1% at the 0-1′ soil interval approximately 50′ to the north, south, east and west of B2-9 since each sampling location is 100′ apart.

Figure 9 - Figure 13, showing the inferred areas of ACM distribution, describe the same distribution as those in Figure 4 - Figure 8. In general, Figure 9 shows that

some form of asbestos at the 0-1' soil interval was distributed in limited areas throughout the Site with the exception of the southeast side near the beach. Figure 10 shows that some form of asbestos at the 1-2' soil interval was concentrated on the west side of Site 2 and along JM's north-south fence line on the east side of the Site while little to no asbestos was detected in samples from the fishing pier area or from the east/southeast side of the Site. Figure 11 shows that some form of asbestos at the 2-3' soil interval was concentrated on the west side of Site 2 and along JM's north-south fence line on the east side of the Site while no asbestos was detected in samples from the fishing pier area or from the east/southeast portion of the Site.

Figure 12 and Figure 13 are composite overlay maps of the inferred of areas of ACM content in soil intervals 0-1' and 1-'2 and 0-1', 1-2' and 2-3', respectively. In general, these two figures show that ACM was detected at Site 2 above and below the 1% threshold and from the 0-3' soil interval on the west side of the Site and also along JM's north-south fence line on the east side of the Site. Little to no asbestos, at any content, was detected within the fishing pier area or along the east/southeast portion of the Site.

Refer to Appendix L for Figure 4 - Figure 13.

6.5.3 Inspection of Soil Cores for Expended/Unexpended Lead Shot and Lead Shavings

The top soil core interval (0-1') at each sampling location at Site 2 was analyzed for total lead (USEPA Method SW 6010) using a 7-day turn-around-time (TAT). A total of 71 soil samples, including all REDO's, were submitted for total lead analysis. Each soil sample was given a unique identification number for processing purposes. For example, B2-13a represents

- a boring location ("B");
- at Site 2 ("2");
- the thirteenth core penetrated ("13");
- "a" suggests that the soil sample was retrieved from the upper most soil core interval.

In this case, the upper most interval is (0-1'). The Tier 1 Soil Remediation Objective for Industrial/Commercial and Residential Properties for lead is 400 mg/kg (35 Illinois Administrative Code, Tiered Approach To Corrective Action Objectives [TACO] Regulations, Part 742, Appendix B, Table B). B2-2a yielded a total lead concentration of 831 mg/kg. It exceeded the remediation objective of 400 mg/kg (Appendix I). B2-2a and B2-16a (the sample with the second highest total lead concentration of 149 mg/kg) were the two soil samples with the highest total lead concentrations collected from the subsurface characterization at Site 2. Therefore, both samples were submitted for TCLP Leachate Analysis (Method 1311/6010) using a 7-day TAT. B2-2a yielded a TCLP lead concentration of 2.7 mg/L and B2-16a yielded a TCLP lead concentration of 0.078 mg/L. The Soil Component of the Groundwater Ingestion Exposure Route Value for Class II groundwater located in the TACO regulations is 0.1 mg/L. RECRA LabNet of University Park, Illinois completed

all total lead analyses and Severn Trent Laboratories completed the TCLP Leachate Analyses. Please note that between the time at which the total lead analyses and the TCLP Leachate Analyses were conducted, RECRA LabNet was sold to Severn Trent Laboratories. All personnel from RECRA LabNet that worked directly with ELM during the total lead analyses were the same personnel that conducted the TCLP Leachate Analyses. Additionally, both analyses (total lead and TCLP lead) were conducted at the University Park Laboratory. The results for the total lead analysis (Table 2) and the TCLP Leachate analysis (Table 3) are as follows:

Table 2. Total Lead Results

Sample ID Number	Concentration (mg/kg)	Sample ID Number	Concentration (mg/kg)
B2-1a	116	B2-30a	36.0
B2-1a REDO	140	B2-31a	14.1
B2-2a	*831	B2-33a	11.5
B2-3a	11.9	B2-34a	22.2
B2-4a	24.8	B2-35a	17.8
B2-4a REDO	8.7	B2-36	38.5
B2-5a	26.0	B2-37a	16.8
B2-6a	24.6	B2-38a	14.1
B2-7a	13.7	B2-40a	43.1
B2-8a	55.5	B2-41a	11.0
B2-9a	63.8	B2-42a	133
B2-10a	15.2	B2-43a	11.4
B2-11a	18.0	B2-45a	14.2
B2-12a	74.6	B2-46a	15.6
B2-13a	37.3	B2-47a	35.9
B2-14a	47.1	B2-47a REDO	55.4
B2-15a	109	B2-49a	18.1
B2-16a	149	B2-50a	26.0
B2-17a	49.7	B2-51a	33.4
B2-18a	14.5	B2-52a	4.1 U
B2-19	16.1	B2-52a REDO	4.1 U
B2-21a	29.8	B2-53a	29.2
B2-22a	11.1	B2-54a	4.3
B2-23a	98.1	B2-54a REDO	20.2
B2-25a	20.3	B2-54a REDO REDO	33.4
B2-26a	56.2	B2-56a	4.5 U
B2-27a	55.8	B2-59a	5.3
B2-29a	18.2	B2-61a	4.2 U

Table 2. Total Lead Results (continued)

Sample ID Number	Concentration (mg/kg)	Sample ID Number	Concentration (mg/kg)
B2-62a	4.3 U	B2-75a	25.1
B2-63a	4.3 U	B2-76a	16.4
B2-64a	4.4 U	B2-77a	44.0
B2-69a	4.0 U	B2-78	4.6 U
B2-69a REDO	4.6U	B2-79	4.4 U
B2-70a	3.9 U	B2-80a	8.2
B2-71a	4.9 U	B2-81a	62.5
B2-72a	4.7 U		

* The Tier 1 Soil Remediation Objective for Industrial/Commercial and Residential Properties for lead is 400 mg/kg.

Table 3. TCLP Leachate Analysis Results

Sample ID Number	Concentration (mg/L)
B2-2a	*2.7
B2-16a	0.078

* The Soil Component of the Groundwater Ingestion Exposure Route Value for Class II groundwater located in TACO: 35 ILL. ADM. CODE PART 742 is 0.1 mg/L.

6.5.4 Inspection of Soil Cores for Municipal Waste

Existing information for Site 2 indicated that historical activities at this Site may have included some level of municipal waste disposal. During the subsurface characterization of Site 2, there was no visual municipal waste identified. However, many of the soil intervals did contain shards of glass. The areas where glass was observed were proximal to the parking areas for the fishing pier. Receptacles for trash and debris are placed in these areas and are most likely the reason for the existence of scattered glass.

6.6 Soil Core Inspection of Site 3

Concurrent with and after subsurface sampling activities, soil cores from Site 3 were inspected for the presence of ACM at one-foot intervals. As each four-foot; polybutyrate sample liner was removed from the subsurface, it was taken from Site 3 to a laboratory area within the former JM Manufacturing Facility. A portion of the liner was removed to expose the soil sample for core inspection. The sample was then divided into one-foot intervals and visually inspected by hand physically sifting through sand or breaking apart silty clay.

To avoid creating dust particles while inspecting the cores, each sample interval was inspected by hand. As each liner was opened, the soil and breathing zone were monitored for VOCs using an OVM. No readings were detected in the air adjacent to

the soil or breathing zone in any of the samples inspected at Site 3. A photograph showing the soil core inspection process for Site 3 is located in Appendix C (Photograph #8). The following information details how ACM was sampled and analyzed.

6.6.1 Inspection of Soil Cores for Asbestos Containing Material

During the inspection of soil cores in the field, if any one-foot boring interval contained visible ACM, bulk asbestos analysis was conducted on those fragments suspected of being ACM for that boring interval. If no one-foot boring interval contained visible ACM then all three boring intervals at that boring location were analyzed for bulk asbestos. RCM Laboratories provided a USEPA accredited/IDPH Licensed Asbestos Inspector to perform a visual inspection and material sampling of suspect ACM along with ELM professionals during the inspection of all soil cores from Site 3. Samples that were derived from a soil core where no boring interval contained visible ACM were placed in 50-gram plastic blood vials for transport to the laboratory. These samples were analyzed according to the USEPA recommended PLM method. Analyses were conducted at RCM's in-house NVLAP accredited laboratory. For Certificates of Accreditation for RCM Laboratories, refer to Appendix E. When visible ACM was identified at a given one-foot interval during the soil core inspection in the field, the suspect ACM was placed into a ziplock bag and properly labeled. Additionally, if no ACM was observed in any of the one-foot intervals, each one-foot interval was placed in a separate ziplock bag and properly labeled. All ziplock bags containing one-foot intervals of soil where no ACM was observed and one-foot intervals where ACM was observed were archived and placed in labeled coolers for storage. Once all final reports have been written and reviewed by all concerned parties and the project has been completed, JM will dispose of the one-foot soil intervals according to all applicable laws and regulations. Until the project is complete, ELM will maintain possession of the coolers. As a result of this method of sampling, archiving and sample storage, all soil collected during the subsurface characterization was deposited into ziplock bags and stored in coolers. No soil from the subsurface characterization remained at the former JM Manufacturing Facility that required disposal.

As indicated in Appendix E, asbestos content, non-asbestos fibrous components and non-fibrous components were estimated for each sample submitted for PLM analysis. Each sample was given a unique identification number. For example, B3-04 (0-1') represents:

- a sample retrieved from a soil boring ("B");
- at Site 3 ("3");
- at the fourth boring location penetrated (04);
- at the 0-1' soil core interval.

This type of description was used to describe a sample retrieved from a sampling location where visible ACM was observed and where no visible ACM was observed in any of the one-foot interval. Additionally, AB3-01 (1-2') represents:

- a sample retrieved from a soil boring ("B");
- at Site 3 ("3");
- at the first boring location penetrated (01);
- at the 1-2' soil core interval;

- "A" denotes that this was a sample where visible ACM was observed at the 1-2' soil core interval and the ACM fragment/fragments were submitted for PLM analysis.

For a summary of the PLM analysis results from Site 3, refer to the summary table in Appendix E.

To confirm or deny the presence of friable asbestos in the breathing zone during soil core inspection, a Licensed Asbestos Inspector from RCM Laboratories analyzed a worker-monitoring device (Gilian low volume personal sampling pump with mixed cellulose ester filter) that was placed in the laboratory on the first day of soil core inspections. The sample was analyzed on-site by Phase Contrast Microscopy, NIOSH Method 7400, and the sample was below the PEL of 0.1 fiber/cc. The result from the analysis of this air-monitoring device is located in Appendix E.

A summary of data collected during the subsurface characterization at Site 3 is as follows:

SUBSURFACE PENTRATING ACTIVITY

Total number of soil boring locations where soil was collected for ACM inspection...	**48**
Total number of soil boring locations re-penetrated because of two or more feet of the sample core contained no recovery (i.e., REDOs)...	**12**
Total number of four-foot cores penetrated and inspected regardless of the amount of recovery...	**60**
Number of four-foot cores where ACM was visually identified at any interval (includes the initial cores where there were two feet of no recovery plus all accompanying REDOs, which totals 60 cores)...	**8 or 13.3%**

FIELD INSPECTIONS

Total number of one-foot intervals field inspected for ACM (including all one-foot intervals where the four-foot soil core contained two feet of no recovery plus all REDOs)...	**168**
Total number of one-foot intervals where ACM was visually identified (including all one-foot intervals where the four-foot soil core contained two feet of no recovery plus all REDOs which yields a total of 168 one-foot intervals)...	**11 or 6.5%**

VISUAL ACM IDENTIFICATION AT EACH INTERVAL

Total number of times when ACM was visually identified in the field at the 0-1' interval with a total of (60) 0-1' intervals recovered and inspected including REDOs...	**3 or 5.0%**
Total number of times when ACM was visually identified in the field at the 1-2' interval with a total of (60) 1-2' intervals recovered and inspected including REDOs ...	**4 or 6.6%**
Total number of times when ACM was visually identified in the field at the 2-3' interval with a total of (48) 2-3' intervals recovered and inspected including REDOs ...	**4 or 8.3%**

NUMBER OF ONE-FOOT INTERVALS SUBMITTED FOR PLM ANAYLSIS

Total number of one-foot intervals submitted for PLM analysis (**includes** all REDOs and all one-foot intervals where ACM was visually identified in the field)...	**154**
Total number of one-foot intervals submitted for PLM analysis where no ACM was observed in the field during the soil core inspection (includes all REDOs)...	**143**
Of the total number of one-foot intervals submitted for PLM analysis where no ACM was observed in the field during the soil core inspection (which yields a total of 143 one-foot intervals), how many contained some form of asbestos at any quantity (includes all REDOs)...	**12 or 8.3%**
Of the total number of one-foot intervals submitted for PLM analysis where no ACM was observed in the field during the soil core inspection and contained some form of asbestos at any quantity (which yields a total of 12 one-foot intervals), how many contained an asbestos content greater than 1%...	**1 or 8.3%**

PLM ANALYSIS CONFIRMATION

Total number of one-foot intervals submitted for PLM analysis where ACM was observed in the field during the soil core inspection (includes all REDOs)...	**11**
Of the total number of one-foot intervals submitted for PLM analysis where ACM was observed in the field during the soil core inspection (which yields a total of 11 one-foot intervals), how many contained some form of asbestos at any quantity (includes all REDOs)...	**11 or 100%**
Of the total number of one-foot intervals submitted for PLM analysis where ACM was observed in the field during the soil core inspection and contained some form of asbestos at any quantity (which yields a total of 11 one-foot intervals), how many contained an asbestos content greater than 1%...	**8 or 72.7%**

RESULTS OF PLM ANALYSIS OF THE 0-1' INTERVAL

Total number of times when ACM was identified at any quantity, during PLM analysis, at the 0-1' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [54] 0-1' intervals)...	**7 or 12.9%**
Of the total number of times when ACM was identified at any quantity, during PLM analysis, at the 0-1' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields total of [7] 0-1' intervals), how many contained an asbestos content greater than 1%...	**4 or 57.1%**

RESULTS OF PLM ANALYSIS OF THE 1-2' INTERVAL

Total number of times when ACM was identified at any quantity, during PLM analysis, at the 1-2' interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [56] 1-2' intervals)...	**9 or 16.0%**

Of the total number of times when ACM was identified at any quantity, during PLM analysis, at the 1-2′ interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [9] 1-2′ intervals), how many contained an asbestos content greater than 1%...	**2 or 22.2%**

RESULTS OF PLM ANALYSIS OF THE 2-3′ INTERVAL

Total number of times when ACM was identified at any quantity, during PLM analysis, at the 2-3′ interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [44] 2-3′ intervals)...	**7 or 15.9%**
Of the total number of times when ACM was identified at any quantity, during PLM analysis, at the 2-3′ interval (includes all one-foot intervals submitted for analysis where ACM was observed in the field and not observed in the field during the soil core inspection plus REDOs which yields a total of [7] 2-3′ intervals), how many contained an asbestos content greater than 1%...	**3 or 42.8%**

6.6.2 Description of Site 3 Figures

Figures 16, 17, 18, 19 and 20 describe the spatial and vertical distribution of ACM and the associated asbestos content found at Site 3.

Figure 16 shows that of the 54 (0-1′) soil sample intervals submitted for PLM analysis, seven contained some form of asbestos (four had an asbestos content greater than 1% and three had asbestos content less than 1%). No asbestos was detected in 47 of the 54 samples. Samples from the 0-1′ interval containing some form of asbestos were distributed in limited areas throughout the Site with the exception of the east and northwest portions of the Site.

Figure 17 shows that of the 56 (1-2′) soil sample intervals submitted for PLM analysis, nine contained some form of asbestos (two had an asbestos content greater than 1% and seven had asbestos content less than 1%). No asbestos was detected in 47 of the 56 samples. Samples from the 1-2′ interval containing some form of asbestos were distributed in limited areas throughout the Site with the exception of the central and northwest portions of the Site.

Figure 18 shows that of the 44 (2-3′) soil sample intervals submitted for PLM analysis, seven contained some form of asbestos (three had an asbestos content greater than 1% and four had asbestos content less than 1%). No asbestos was detected in 37 of the 44 samples. Samples from the 2-3′ interval containing some form of asbestos were distributed in limited areas throughout the Site with the exception of the central, southwest and southeast portions of the Site.

Figure 19 is a composite overlay of soil boring intervals 0-1′ and 1-2′ and Figure 20 is a composite overlay of soil boring intervals 0-1′, 1-2′ and 2-3′. These two figures give a visual summary of the spatial and vertical extent of asbestos found in the soil samples submitted for PLM analysis at Site 3. In general, these two figures show that ACM was detected at Site 3 above or below the 1% threshold and from the 0-3′ soil interval in various areas throughout the Site.

Figures 21, 22, 23, 24 and 25 summarize the inferred areas of ACM distribution at Site 3. If a sampling location yielded a soil interval (0-1', 1-2' or 2-3') with a detected amount of ACM, it was then inferred that the ACM was distributed, within that given interval, half the distance to the next nearest sampling location. For example, as shown in Figure 21, ACM was detected at a content of greater than 1% at the 0-1' soil interval at sampling location B3-38. As a result, it is inferred that there is ACM at a content of greater than 1% at the 0-1' soil interval approximately 25' to the north, south, east and west of B3-38 since each sampling location is 50' apart.

Figure 21 - Figure 25, showing the inferred areas of ACM distribution, describe the same distribution as those in Figure 16-Figure 20. In general, Figure 21 shows that some form of asbestos at the 0-1' soil interval was distributed in limited areas throughout the Site with the exception of the east and northwest portions of the Site. Figure 22 shows that some form of asbestos at the 1-2' soil interval was distributed in limited areas throughout the Site with the exception of the central and northwest portions of the Site. Figure 23 shows that some form of asbestos at the 2-3' soil interval was distributed in limited areas throughout the Site with the exception of the central and southern portions of the Site.

Figure 24 and Figure 25 are composite overlay maps of the inferred of areas of ACM content in soil intervals 0-1' and 1-'2 and 0-1', 1-2' and 2-3', respectively. In general, these two figures show that ACM was detected at Site 3 above or below the 1% threshold and from the 0-3' soil interval in various areas throughout the Site.

Refer to Appendix L for Figure 16 - Figure 25.

6.7 Qualitative Threatened and Endangered Plant Species Survey at Site 2 and Site 3

The state-endangered Marram Grass (*Ammophila breviligulata*) was discovered on the east side of Site 2 (associated with dune habitat) during pre-surface and subsurface characterization due diligence activities. Because future long term management strategies may impact the habitats within Site 2 and Site 3, a qualitative threatened and endangered plant species survey was performed so that the appropriate strategy is utilized to address sensitive areas.

The qualitative threatened and endangered plant species survey was performed on August 2 and August 5, 1999 by Ms. Margo Milde and Mr. Jeff Stringer (ELM). Determining the presence of threatened and endangered plant species and if present, their general location was the specific scope of work for this task of the project. Since a comprehensive plant species inventory of Sites 2 and 3 was not part of the scope of work, a quantitative transect or plot approach was not utilized. Since Ms. Milde's expertise as a field ecologist is the categorization and inventory of plant species of the Northeast Illinois region, a visual inspection of both Site 2 and Site 3 was sufficient to fulfill this scope of work. As a result, Ms. Milde and Mr. Stringer walked all areas of both Sites 2 and 3 looking for threatened and endangered plant species as well as indicator plant species that would be associated with the known threatened and endangered plant species of the habitats within Sites 2 and 3. The results of the survey are described in the following sections.

6.7.1 Results of the Threatened and Endangered Plant Species Survey at Site 2

Three state-listed species were discovered within the boundaries of Site 2. The general locations are given in Figure 26 and encompass eight separate plots concentrated on the east/southeast side of Site 2. Each state-listed plant species is described in Table 4:

Table 4. State-Listed Plant Species Observed at Site 2

Common Name	Scientific Name	State-Listing	General Location
Marram Grass	*Ammophila breviligulata*	State-Endangered	Plot 1-Plot 8: Along the dune habitat on the east/southeast side of Site 2
Seaside Spurge	*Chamaesyce polygonifolia*	State-Endangered	Plot 8: Along the sand beach habitat on the east side of Site 2
Sea Rocket	*Cakile edentula*	State-Threatened	Plot 8: Along the sand beach habitat on the east side of Site 2

As shown in Figure 26, areas where state-listed species were found were divided into separate plots depending upon the location and which plant species was present. Table 5 describes which plant species was present within the given plot and the approximate size and location:

Table 5. Threatened and Endangered Plant Species Plot Descriptions - Site 2

Plot	Approximate Size/Location of Plot	State-Listed Plant Species Present
Plot 1	15'X12' rectangular plot/Inside the fishing pier area west of the mulch walking path	Marram Grass
Plot 2	152' row/Inside the fishing pier area along the east side of the mulch walking path	Marram Grass
Plot 3	82' row/Inside the fishing pier area along the east side of the mulch walking path; and 55' row/Inside the fishing pier area along the west side of the mulch walking path	Marram Grass
Plot 4	48'X27' rectangular plot/Inside the fishing pier area west side of the mulch walking path adjacent to the Commonwealth Edison's outfall	Marram Grass
Plot 5	32'X14' rectangular plot/Northeast side of Site 2 along JM's east-west fence line	Marram Grass
Plot 6	39'X14' plot/East side of Site 2 on the west side of the dune; and Large, irregularly shaped plot/East side of Site 2 on the west side of the dune	Marram Grass
Plot 7	Large, irregularly shaped plot/Southeast side of Site 2	Marram Grass
Plot 8	500'X300' plot/East side of Site 2 on the sand beach east of the dune	Marram Grass; Seaside Spurge; Sea Rocket

Because of the size of Site 2, the Site was divided into three subsections to aid in the description of locations where state-listed species were found: (1) Site 2, Fenced-In Area, (2) Site 2, Fishing Pier, and (3) Site 2, BeachFront.

Site 2, Fenced-In Area is the large rectangular-shaped area within JM's north and east fence lines and Commonwealth Edison's south and west fence lines. This area includes the foundation of the former shooting range building, the gravel road leading to the fishing pier and the fishing pier parking area. This area is highly disturbed mesic prairie with several small, disturbed pannes. No state-listed plant species was found in this area (Figure 26).

Site 2, Fishing Pier lies within Commonwealth Edison's property and is adjacent to the outfall canal. This area is characterized by disturbed beach habitat, along with disturbed stabilized beach foredunes and a small section of shrubby fencerow habitat. Plot 1, Plot 2, Plot 3 and Plot 4 are found within the Site 2, Fishing Pier area and only Marram Grass are found in these plots (Figure 26 and Appendix C: Photograph #11-Photograph #16).

Site 2, Beach Front is the east side of Site 2 and includes three habitats: sand beach, stabilized foredunes and pannes. All three state-listed species were found within this subsection of Site 2 and make up Plot 5, Plot 6, Plot 7 and Plot 8. Marram Grass is the only state-listed species within Plots 5-7 and is located along the dunes of the east/southeast side of Site 2. Seaside Spurge and Sea Rocket are located within the

boundaries of Plot 8, which only encompasses sand beach area of Site 2. Marram Grass is also located within Plot 8 but only occurs along the sand beach area adjacent to the dunes (Figure 26 and Appendix C: Photograph #17-Photograph #30).

A list of indicator species and a comprehensive plant list for each subsection (Site 2, Fenced-In Area; Site 2, Fishing Pier; and Site 2, BeachFront) of Site 2 are found in Appendix J. Specific pictures and locations of Plot 1 - Plot 8 and close-up pictures of each state-listed plant species observed during the survey are found in Appendix C (Photograph #11-Photograph #30).

6.7.2 Results of the Threatened and Endangered Plant Species Survey at Site 3

No state-listed plant species was observed during the survey at Site 3. The general habitats that were observed on Site 3 included sedge meadow, wet prairie, and mesic prairie. A list of representative plant species for Site 3 is found in Appendix J.

6.8 Wetland Delineation at Site 2 and Site 3

Hydrophytic vegetation was observed in various areas throughout Site 2 and Site 3 during pre-surface and subsurface characterization due diligence activities. Because future long-term management strategies may adversely impact the habitats within Site 2 and Site 3, a wetland delineation was performed within the boundaries of the two Sites to confirm the presence of wetlands.

On September 1, 1999, Mr. Thomas McArdle and Mr. John E. Lingle of Christopher B. Burke Engineering, LTD (CBBEL) performed a wetland delineation within the boundaries of Site 2 and Site 3 (Appendix C: Photograph #9 and Photograph #10). Prior to September 1, CBBEL reviewed various regulatory references, which showed the presence of wetlands at Sites 2 and 3. The regulatory references included the National Wetland Inventory (NWI), the Lake County Wetland Inventory and Advanced Identification (LCWI and ADID) and the Natural Resources Conservation Service (NRCS) Wetland Map (Appendix K).

The NWI, Waukegan and Zion Quadrangles (1981) indicates the presence wetland area on Site 2. The LCWI and ADID map indicates the presence of wetland areas within Sites 2 and 3. The NRCS wetland map for Lake County, Illinois was reviewed to determine the location of wetlands documented within agricultural land at Sites 2 and 3. The NRCS is the lead agency responsible for determining whether wetlands are located within agricultural land. The NRCS wetland map indicates that wetlands are located within Sites 2 and 3. However, since the Sites do not contain agricultural land, no further consultation with NRCS was required (Appendix K).

The Soil Survey of Lake County, Illinois (1970) was reviewed to determine the location of hydric soils on Sites 2 and 3. The presence of hydric soil can be indicative of wetland conditions. "Made Land" was the soil present within the Sites (Appendix K).

The Flood Insurance Rate Map (FIRM) for Lake County and Incorporated Areas, Illinois, Community Panel Numbers 17097C 0089F and 17097C 0095F was reviewed to determine the location of regulatory floodplains within Sites 2 and 3. The presence of identified floodplain can be indicative of wetland hydrology. The FIRM

indicated that the southern and eastern portion of Site 2 is located within Zone AE (100-year) floodplain. No regulatory floodplain is located within Site 3 (Appendix K).

6.8.1 Methodology

The Corps of Engineers (COE) Wetland Delineation Manual, dated January, 1987, identifies the mandatory technical criteria for wetland identification. The three essential characteristics of a jurisdictional wetland are hydrophytic vegetation, hydric soils, and wetland hydrology (Appendix K).

The hydrophytic vegetation criteria is based on a separation of plants into five basic groups: (1) obligate wetland plants that occur almost always in wetlands under natural conditions; (2) facultative wetland plants that usually occur in wetlands, but occasionally are found in nonwetlands; (3) facultative plants that are equally likely to occur in wetlands or nonwetlands; (4) facultative upland plants that usually occur in nonwetlands, but occasionally are found in wetlands; and (5) obligate upland plants that almost always occur in nonwetlands under natural conditions. If greater that 50% of the plants are facultative, facultative wetland, or obligate wetland, the subject area is considered jurisdictional in terms of vegetation (Appendix K).

Hydric soils are defined in the manual as "soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part." Field indicators include color, mottling, gleying and odor (Appendix K).

The wetland hydrology criterion is often the most difficult to determine. Typically, the presence of water for a week or more during the growing season creates anaerobic conditions in the soil which in turn lead to the establishment of hydrophytic vegetation. Examples of wetland hydrology field indicators include morphological adaptations of plants, driftlines, sediment deposits and watermarks (Appendix K).

To quantify a wetland's native attributes for comparative purposes, *C*-values were established by Swink and Wilhelm (1994). Each plant species is rated on a scale of zero to 10, zero representing plants commonly found in a variety of habitats, and 10 being plants found only under specific ecological conditions. The *C*-value of plants found in wetland areas can give some insight as to the overall quality or value of the wetland. Wetlands containing an abundance of plants with a low *C*-value suggest that these wetlands have been disturbed in the past. Wetlands containing an abundance of plants with a high *C*-value suggest that specific ecological conditions necessary for their survival are intact; thus, disturbance is probably minimal and the wetland maintains much of its original value. A mean *C*-value of $\geq$3.5 suggests that a wetland maintains at least some of its original ecological integrity (Appendix K).

6.8.2 Wetlands Delineated at Site 2

Results from the wetland delineation at Site 2 revealed five distinct wetland areas. Two larger wetlands were classified as "Scrub-Shrub" wetlands and the other three were "Man-Induced" wetlands. Also, one "Waters of the U.S." was observed which describes Lake Michigan and associated beach front habitat.

6.8.2.1 "Scrub-Shrub" Wetlands

The two wetlands characterized as "scrub-shrub" wetlands consist of shallow, isolated depressions dominated by a variety of herbaceous and woody species of low to moderate quality. One wetland was located inside the fishing pier area on the south side of Site 2 and the other was located on the southeast side of Site 2 east of the fishing pier area. Dominant plants identified by CBBEL included sandbar willow (*Salix interior*), eastern cottonwood (*Populus deltoides*) and gray dogwood (*Cornus*

racemosa). Evidence of positive wetland hydrology included water marks, drift material and water stained vegetation. The soil is mapped as Made Land, however, the CBBEL field reconnaissance identified a primarily undisturbed profile consisting of sand with organic streaking, which is a hydric soil indicator (Appendix K). The mean C-value for these two wetlands was 2.45, which is indicative of a disturbed area and describes wetland vegetation of low quality. Appendix C (Photograph #34-Photograph #42) contains photos and Figure 27 shows the approximate locations of each of these wetlands. The approximate size of each of the scrub-shrub wetlands is found on Figure 27. These wetlands have not been professionally field surveyed so exact size has not been established. However, each of these wetlands is less than one acre in size.

6.8.2.2 "Man-Induced" Wetlands

The three areas characterized as "Man-Induced" wetlands had a dominance of hydrophytic vegetation and positive wetland hydrology in these locations, however, the upper soil profile lacked characteristic hydric soil indicators because of disturbance.

As specified in the U.S. Army COE 1987 Wetland Delineation Manual, wetland determinations require an evaluation utilizing methodology for "Atypical Situations" when a determination has already been made under the Routine Determination Methodology and the Comprehensive Determination Methodology "that positive indicators of hydrophytic vegetation, hydric soils and/or wetland hydrology could not be found due to effects of recent human activities or natural events". Use of methodology for Atypical Situations is applicable to delineations "which may result in removal or covering of indicators of one or more wetland parameters, naturally occurring events which may result in either creation or alteration of wetlands and in delineation wetlands that have been purposely or incidentally created by human activities, but in which wetland indicators of one or more parameters are absent" (Appendix K).

"A man-induced wetland is an area that has developed at least some characteristics of naturally occurring wetland due to either intentional or incidental human activities. In virtually all cases man-induced wetlands involve a significant change in the hydrologic regime which may either increase or decrease the wetness of the area". Methodology, as specified in the manual, required the application of four steps. They are:

1. the determination whether the area represents a man-induced wetland;
2. a determination whether a permit will be needed for the area if found to be a wetland;
3. a characterization of the vegetation, soils and hydrology;
4. a wetland determination noting that "evidence that the change in hydrology occurred so recently that soils could not have developed hydric characteristics".

The man-induced areas at Site 2 contain positive wetland hydrology, a dominance of hydrophytic vegetation and a lack of hydric soils (Appendix K).

Also, as previously noted, a determination is required to evaluate whether a permit will be needed if the area is found to be a wetland or if the man made area is exempt from COE jurisdiction. In the opinion of the CBBEL field investigators, these areas are not exempt from COE jurisdiction if they have not been abandoned for at least five years. Past aerial photography (1987) and discussions with personnel with JM indicate that these portions of the property were graded prior to 1994 (Appendix K).

Therefore, in the opinion of CBBEL, the areas characterized as "Man-Induced" wetlands (Figure 27) are jurisdictional wetlands utilizing COE methodology for Atypical Situations under the subsection regarding man-induced wetlands and do not meet the COE exemption criteria for creation in dry land because the graded area in the upland soil portions of the parcel have been abandoned for at least five years (Appendix K).

Dominant plants identified by CBBEL in the "Man-Induced" wetlands included narrow-leaved cattail (*Typha angustifolia*), late goldenrod (*Solidago gigantea*) and purple loosestrife (*Lythrum salicaria*). The mean C-value for these wetlands was 2.64, which is indicative of a disturbed area and describes wetland vegetation of low quality. Appendix C (Photograph #31-Photograph #33) contains photos and Figure 27 shows the approximate locations of each of these wetlands. The approximate size of each of the "Man-Induced" wetlands are found on Figure 27. These wetlands have not been professionally field surveyed so exact size has not been established. However, each of these wetlands is less than one-half acre in size.

6.8.2.3 "Waters of the U.S." – Lake Michigan

CBBEL staff characterized this jurisdictional "Waters of the U.S." area on the east end of Site 2 (Figure 27). The area consists of Lake Michigan and contiguous beachfront. At the time of the CBBEL site visit, evidence of positive wetland hydrology included drift material and water marks. The soil profile was almost exclusively sand and contained no organic streaking (Appendix K).

6.8.3 Wetlands Delineated at Site 3

CBBEL staff identified two jurisdictional wetlands on Site 3, which were characterized as "Emergent Drainageways" and are labeled as such on Figure 28. One wetland on the northwest side of Site 3 consists of a well defined drainageway containing steep side slopes and shallow flowing water. The wetland located on the northeast side of Site 3 consists of a more shallow drainage swale at the base of railroad tracks which make up the study area's eastern boundary. The wetlands are dominated by lower quality herbaceous vegetation consisting of primarily cattail (*Typha angustifolia*), purple loosestrife (*Lythrum salicaria*) and red-rooted spikerush (*Eleocharis erythropoda*). Evidence of positive wetland hydrology included shallow inundation, saturation and driftlines. The soil is mapped as Made Land, however, the profiles were dark in color, contained low chroma matrices and organic odors. These soil conditions are characteristics commonly associated with hydric soils (Appendix K).

The mean C-value for these wetlands was 3.14, which is indicative of a disturbed area and describes wetland vegetation of low quality. Appendix C (Photograph #43 and Photograph #44) contains photos and Figure 28 shows the approximate locations of each of these wetlands. The approximate size of each of the emergent drainageways are found on Figure 28. These wetlands have not been professionally field surveyed so exact size has not been established. However, each of these wetlands are less than one acre in size.

After the completion of the wetland delineation at Site 2 and Site 3, it was estimated that there were approximately 3.5 total acres of jurisdictional wetland and "Waters of the U.S." based on the methodology established by the U.S. Army COE. In the opinion of CBBEL, any alteration of wetlands under present regulations will require a permit. CBBEL recommends that on-site wetland area be avoided to the extent possible.

7.0 INTERPRETATION OF RESULTS AND CONCLUSIONS

According to the results of the surface and subsurface characterization of Site 2 and Site 3, it is evident that non-friable ACM is present on the surface of the Sites and within the subsurface at 0-3′ bgs. Because the ACM found at these two Sites is in a non-friable form (transite pipe, bituminous roofing materials, and asbestos-ore type material), the threat to human health and the environment is negligible. This conclusion is also supported by the fact that all air monitoring for friable asbestos during fieldwork activities resulted in no exposure of friable asbestos to field personnel (Appendix F).

7.1 ACM at Site 2

Surface ACM was located throughout Site 2 with the exception of the beachfront area east of the dune and on the southeast end of the Site (Figure 2 – Appendix L). This is consistent with reports that berms used during the Pam Am Games that consisted of ACM were leveled after the completion of the games. Visible ACM was removed from the Site during the surface characterization. However, ELM personnel have located small pieces of ACM on the Site since the completion of the surface inspection. As previously mentioned however, this ACM is in a non-friable form and is of little threat to human health or the environment.

All subsurface ACM with asbestos content greater than one percent at Site 2 was located in the area of the former shooting range building and the fishing pier parking lot. No subsurface ACM with asbestos content greater than one percent was located on the beach or within the fishing pier area. Asbestos content greater than one percent was found only in four locations from the 0-1′ interval, 10 locations at the 1-2′ interval and nine locations at the 2-3′ interval. There was a total of 64 separate soil sampling locations and a total 71 four-foot cores penetrated and inspected. Additionally, of the 206 one-foot soil intervals inspected, 36 (or 17.4%) contained visible ACM.

Visual identification of the ACM with the soil intervals proved to be a highly effective method for determining ACM in the subsurface. Of the 36 one-foot intervals submitted for PLM analysis where ACM was visually observed, 35 (or 97.2%) contained a given quantity of asbestos. This is to be expected because these 36 samples submitted were actual pieces of suspected ACM. Additionally, 126 one-foot intervals were submitted for PLM analysis where no ACM was observed in any of the intervals. Of those 126 intervals, only one (0.79%) yielded asbestos content greater than 1%.

In summary, there is little ACM at 0-3′ bgs when the size of the Site and the number of soil sampling locations are taken into account. There is no ACM in the fishing pier area and along the beach. Most of the ACM observed was located in the areas where the former berms were created and then subsequently leveled.

7.2 ACM at Site 3

Surface ACM was located throughout Site 3 with the exception of the south-central portion of the Site. Historically, the former JM Administration Building parking lot was located on the northeast end of the Site. According to JM, the parking lot was constructed with materials containing ACM. Over a period of years during the use of

the lot and during and after its demolition, ACM was distributed throughout the surrounding area. Visible ACM was removed from the Site during the surface characterization. However, ELM personnel have located small pieces of ACM on the Site since the completion of the surface inspection. As previously mentioned however, this ACM is in a non-friable form and is of little threat to human health or the environment.

Subsurface ACM with asbestos content of greater than one percent at Site 3 was located on the northeast side of the Site. Also, one location in the central portion of the Site and one location on the southwest portion of the Site yielded samples with asbestos content of greater than one percent. Little to no subsurface ACM was located on the east, south and northwest portions of the Site. Asbestos content greater than one percent was found only in four locations from the 0-1' interval, two locations at the 1-2' interval and three locations at the 2-3' interval. There was a total of 48 separate soil sampling locations and a total 60 four-foot cores penetrated and inspected. Additionally, of the 168 one-foot soil intervals inspected, 11 (or 6.5%) contained visible ACM.

Visual identification of the ACM with the soil intervals proved to be a highly effective method for determining ACM in the subsurface. Of the 11 one-foot intervals submitted for PLM analysis where ACM was visually observed, 11 (or 100%) contained a given quantity of asbestos. This is to be expected because these 11 samples submitted were actual pieces of suspected ACM. Additionally, 143 one-foot intervals were submitted for PLM analysis where no ACM was observed in any of the intervals. Of those 143 intervals, only one (0.69%) yielded asbestos content greater than 1%.

In summary, there is little ACM at 0-3' bgs when the size of the Site and the number of soil sampling locations are taken into account. ACM in the subsurface was mostly concentrated in the area of the former parking lot. This is to be expected since the materials used to build the former parking lot contained ACM.

7.3 Lead and Municipal Waste at Site 2

Of the 71 samples submitted for total lead analysis, one sample yielded at total lead concentration above The Tier 1 Soil Remediation Objective for Industrial/Commercial and Residential Properties for lead of 400 mg/kg. This concentration was 831 mg/kg at B2-2a. Since all of other samples were below the referenced threshold of 400 mg/kg, the distribution and potential impact of expended/unexpended lead shot and lead shavings at Site 2 were sufficiently addressed. However, to confirm that there is not an accumulation of lead at B2-2a, additional soil sampling may be warranted at this location.

The soil samples from B2-2a and B2-16a (the two soil samples yielding the highest total lead concentration) were also submitted for TCLP analysis. The concentrations from the TCLP analysis were 2.7 mg/L and 0.078 mg/L, respectively. The soil sample from B2-2a exceeded the Soil Component of the Groundwater Ingestion Exposure Route Value for Class II groundwater of 0.1 mg/L. The concentration of 2.7 mg/L did exceed the established threshold. However, no remedial action is necessary as a result of this concentration because the drinking water source for the City of Waukegan is Lake Michigan. The City of Waukegan has entered into a Memorandum of Understanding with the IEPA that shows Waukegan has adopted an ordinance that effectively prohibits the installation or use of groundwater as a

potable supply of water. Also, a concentration of 2.7 mg/L does not meet the characteristic of a hazardous waste based on the TCLP procedure. The criterion for lead to exhibit hazardous waste characteristics is 5.0 mg/L and is utilized for the purposes of removal and disposal of contaminated soil.

No municipal waste was observed at Site 2 during the subsurface characterization and therefore no additional activities are needed to address this issue for the purposes of this project.

7.4 Threatened and Endangered Plants of Site 2 and Site 3

Three state-listed species were discovered within the boundaries of Site 2 (Marram Grass, Seaside Spurge and Sea Rocket). All sensitive species were concentrated on the east and southeast side of Site 2. All of the species are located in areas that are fences off to the public with the exception of Plots 1 – 4 (Figure 26 – Appendix L). All Plots with these sensitive species should be avoided and the IDNR should be notified of the locations and sizes of the Plots and species that make up each Plot. All future long-term management strategies should take into account the locations of the sensitive species and these areas should be avoided.

No threatened or endangered plant species was located within the boundaries of Site 3.

7.5 Wetland Delineation of Site 2 and Site 3

Results from the wetland delineation yielded seven separate wetlands within Site 2 and Site 3 with an approximate total acreage of 3.5. These wetlands are of low quality and most were more than likely created by the industrial activity that has taken place within the Sites over the course of the past 60 years (the "man-induced" wetlands of Site 2 and the emergent drainageways of Site 3.) Depressions, trenches and drainage ditches were created at these Sites while construction of various structures such as roads and buildings took place. As a result, evasive species, such a common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*) and cattail (*Typha angustifolia*) were established in these impacted areas. Despite the poor quality of the wetlands, a permit to alter the wetlands in any way (fill, excavate, etc.) would more than likely require a permit. All locations of the wetlands within Site 2 and Site 3 should be accounted for before remedial or industrial development occur.

Figure 29 (Appendix L) overlays all ACM subsurface findings with the wetlands and the Plots that denote locations of state-listed species at Site 2. No sensitive habitat lies in areas where ACM is located in the subsurface that has asbestos content of greater than one percent.

Figure 30 (Appendix L) overlays all ACM subsurface findings with the wetlands Site 3. For the most part, no sensitive habitats lie in areas where ACM is located in the subsurface that has asbestos content of greater than one percent. Exceptions include the east end of the wetland that runs parallel to Greenwood Avenue where ACM was found at the 0-1' interval and at the northern end of the wetland that lies adjacent to railroad tracks on the east side of Site 3. This area of overlap contained asbestos greater that one percent at the 2-3' interval.

8.0 RECOMMENDATIONS

The following sections describe the management recommendations for Sites 2 and 3 regarding the ACM and the sensitive areas located at both Sites.

8.1 Management of ACM at Site 2 and Site 3

Because of the type and condition of ACM found at both Sites 2 and 3, there is no immediate threat to human health or the environment. All ACM that was located on the surface and within the subsurface of the Sites was non-friable. Therefore, immediate and aggressive remedial action is not warranted for these two Sites.

A recommended long-term strategy for Site 2 is the re-development of the property for industrial purposes. Site 2 lies within an industrial corridor along Lake Michigan in Waukegan, Illinois. The Site could be potentially attractive to a small business desiring a presence in the area. The paving of most of Site 2 for industrial purposes would provide an engineering barrier between ACM and the public. Therefore, exposure to any of the ACM in the industrial area would no longer be an issue. Also, while long-term strategy is being discussed, periodic monitoring of Site 2 with respect to surface ACM is recommended. Periodic monitoring would allow for the removal of surface ACM so that exposure to the environment would not occur.

The quantity of ACM found at Site 3 was limited. Additionally, because of the presence Commonwealth Edison transmission towers, aggressive remedial action and re-development of the Site 3 is not feasible. Therefore, periodic monitoring of Site 3 with respect to surface ACM is recommended. Periodic monitoring would allow for the removal of surface ACM so that exposure to the environment would not occur.

8.2 Management of the Threatened and Endangered Species at Site 2

Because three state-listed plant species (Marram Grass, Seaside Spurge and Sea Rocket) were located within the boundaries of Site 2, the IDNR should be notified of their presence. Information as to the species present, the locations and the approximate sizes of each Plot should be given. Also, there are four Plots (Plot 1 – Plot 4, Figure 26 – Appendix L) that are not protected from human impact within the boundaries of Site 2. Plot 1 – Plot 4 are located within the fishing pier area and are located in areas where the Marram Grass could be easily trampled by foot. These areas include the mulch walking path and the beach area along Commonwealth Edison's outfall canal where people fish. It is recommended that, at a minimum, signs be erected along Plot 1 – Plot 4 to demarcate the boundaries of the Plots as well as education the public to the presence, value and sensitivity of Marram Grass. Currently, no signs or borders are present to notify the public of this state-endangered plant that is located within the fishing pier area. All other areas are fenced-off as to make the remainder of the sensitive areas of state-listed species inaccessible to the public.

Additionally, if remedial or industrial development activities were to occur within the boundaries of Site 2, all Plots containing the state-listed species should be sufficiently marked and borders erected so that field personnel could avoid these areas. Also, buffer zones should be established surrounding each of the Plots as to protect the Plots from passive impacts from construction or remedial activities. Issues such as dune and terrace stabilization, erosion, and stormwater run-off all

should be addressed before development or remediation begin. Thorough protection of the state-listed species including public education, erecting signs and borders where necessary and preplanning of remedial/development activity should contribute to the preservation of the highly valuable plants within the boundaries of Site 2.

8.3 Management of the Wetlands at Site 2 and Site 3

Approximately 3.5 acres of wetlands were delineated within the boundaries of Site 2 and Site 3. Before any remedial and/or industrial development activity was to take place in the areas of these wetlands, the wetlands should be surveyed so that exact boundaries can be established. Following surveying activities, the boundaries should be well marked and borders erected so the field personnel can avoid these habitats. Despite the fact that these wetlands are of poor quality, any alteration of the wetlands (including the filling or excavation of the wetland) will more than likely require a permit. The permitting process will have to begin only if the long term strategy of managing Site 2 and Site 3 involve the alternation of the wetlands on Site. Currently, it is recommended that all wetlands be avoided to the extend possible.

DRAFT

Appendix A

Letter from Brad Bradley (USEPA) to Denny Clinton (JM): Modifications to the "Characterization Plan for Additional Sites" for the Johns-Manville Site in Waukegan, Illinois

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

EXHIBIT C

REPLY TO THE ATTENTION OF:
SR6-J

VIA TELEFAX AND
CERTIFIED MAIL
RETURN RECEIPT REQUESTED

July 10, 1998

Denny Clinton
Johns-Manville Corporation
10100 West Ute Avenue
Littleton, CO 80127

Dear Mr. Clinton:

The U.S. Environmental Protection Agency (EPA), Illinois EPA, and Illinois Department of Natural Resources (DNR) have reviewed the April 3, 1998 "Characterization Plan for Additional Sites" (the Plan) for the Johns-Manville Site in Waukegan, Illinois and hereby provide approval, with modifications listed below, for Tasks 4 through 6 for Sites 2 and 3. The modifications are as follows:

Site 2:

Using information collected regarding the configuration of the former shooting range, a 100 foot grid shall be layed out across Site 2. Sampling shall be conducted at the points of intersection of the grid. Borings shall be made at one foot depth intervals to a total depth of three feet at each sampling location. Samples shall be visually inspected. If any boring interval contains visible asbestos-containing material (ACM), no analyses for asbestos need to be conducted for that boring location. If no boring intervals contain visible ACM, then all three boring intervals at that grid location shall be analyzed for bulk asbestos. The top interval at each sampling location shall be analyzed for total lead, and two intervals (total) shall be analyzed for TCLP lead. The TCLP samples shall be selected based on visual observations (i.e. the intervals with the greatest quantity of lead bearing debris, such as bullet fragments). Every attempt shall be made to have representative grid samples collected in the areas where trenches or berms previously existed; grid points may be moved slightly in the field to achieve this goal.

Printed on Recycled Paper

Site 3:

Using information collected to date regarding Site 3, a 50 foot grid shall be layed out across Site 3. Sampling shall be conducted at the points of intersection of the grid. Borings shall be made at

one foot depth intervals to a total depth of three feet at each location. Samples shall be visually inspected. If any boring interval contains visible ACM, no analyses need to be conducted for that boring location. If no boring intervals contain ACM, then all three boring intervals at that grid location shall be analyzed for bulk asbestos.

Site 2 and Site 3:

1. At least 14 days prior to collecting any samples at Sites 2 and 3, Johns-Manville shall specify to EPA, Illinois EPA, and Illinois DNR (the agencies), in writing, which labs they will be using for asbestos and lead analyses.

2. Johns-Manville shall complete all sampling activities outlined above and submit preliminary analytical results to the agencies within 90 days of your receipt of this letter (this hereby amends the schedule stated in my March 20, 1998 letter to you).

3. Johns-Manville shall submit the written report for Sites 2 and 3 described in Task 5 of the Plan to the agencies within 105 days of your receipt of this letter.

4. Johns-Manville shall arrange the meeting for Sites 2 and 3 described in Task 6 of the Plan with the agencies within 120 days of your receipt of this letter.

5. The ACM generated as part of Task 4 for Sites 2 and 3 may be disposed of in the Settling Basin; if Johns-Manville plans to dispose of this ACM in a different manner, the agencies must be notified at least 30 days prior to the onset of said disposal.

The work contemplated under the Plan is not inconsistent with the applicable requirements of the National Contingency Plan, 40 CFR Part 300. If you have any questions concerning this letter, please contact me at (312) 886-4742.

Sincerely,

Brad Bradley

Brad Bradley
Remedial Project Manager

cc: Bob Rogers, Illinois EPA
Beth Wallace, Illinois AG
Randy Heidorn, Illinois Nature Preserves Commission
Steve Davis, Illinois DNR
Jeff Diver, rep. City of Waukegan

bcc: Kris Vezner, CS-13J
Sally Averill

DRAFT

Appendix B

Illinois Department of Public Health News Release (May 15, 1998)

May 15, 1998

ILLINOIS BEACH STATE PARK SAFE FOR PUBLIC USE

SPRINGFIELD, IL — Dr. John R. Lumpkin, state public health director, today announced that, after a thorough analysis of Illinois Beach State Park air, water and sand for possible asbestos contamination, it has been determined the popular recreation area is safe for public use.

"We believe people can safely visit and enjoy this treasured natural resource," Dr. Lumpkin said. "Asbestos was not detected in the air or water and extremely low levels of asbestos, well below any human health concern, were found in only a handful of the sand samples."

The Illinois Department of Natural Resources (DNR) will continue to closely patrol the six-mile beach for any asbestos-containing material that may wash up on shore, and signs and brochures at the park will advise visitors to report any such materials to the park office. Examples of what the asbestos-containing materials look like also will be available at the park.

Efforts by the U.S. Environmental Protection Agency (USEPA) and others to identify the source of the asbestos-containing materials are continuing.

About 200 air, water and sand samples were collected in March by an independent contractor, Hanson Engineers of Springfield, hired by DNR. The samples were analyzed by TEM Inc. of Glen Ellyn and the results were reviewed by representatives of IDPH; DNR and the Illinois Environmental Protection Agency.

Since no standards have been established for outdoor exposure to asbestos, strict federal indoor standards for schools were applied to the sand samples that were positive for asbestos. The asbestos content of the positive samples was less than 1 percent, the level of concern for asbestos in an enclosed classroom. The USEPA states that only material containing greater than 1 percent asbestos is considered asbestos-containing material.

Air samples were collected aggressively, which means that blowers were used to stir the sand and air for 30 minutes immediately before collecting the sample. This method assured that any asbestos fibers that might have settled to the ground would be reintroduced into the air, resulting in a greater likelihood that they would be captured in the sample.

The air samples and 10 percent of the sand samples were analyzed by transmission electron microscopy (TEM), which utilizes an electron microscope capable of 20,000 magnification for detecting extremely small fibers or parts of fibers. The remainder of the sand samples were analyzed

by polarized light microscopy, a more common method that uses less magnification but is still able to detect very small fibers.

Although it unlikely a child would eat an appreciable amount of sand, the asbestos levels in the few sand samples from the beach and shoreline that were positive for asbestos (23 of 179 samples) were so low that they would not be considered a health risk.

The health risks of asbestos exposure depend primarily on how much is inhaled and over what period of time. Studies first identified health problems associated with asbestos in ship workers during World War II. These workers, who used no respiratory protection, routinely handled asbestos insulation that was utilized to wrap ship boilers. Their long-term exposures to high concentrations of asbestos in the air led to asbestosis (a hardening of the lungs that makes breathing difficult), mesothelioma (a cancer of the chest lining) and lung cancer.

Exposure to small amounts of asbestos for short time periods has not been found to be associated with human disease.

Low levels of asbestos are commonly found in the environment, such as in high traffic areas due to the wearing of automobile brakes or in drinking water taken from a large body of water.

Illinois Department of Public Health
535 West Jefferson Street
Springfield, Illinois 62761
Phone 217-782-4977
Fax 217-782-3987
TTY 800-547-0466
Questions or Comments

Copyright © 1999 State of Illinois

DRAFT

Appendix C

Project Photographs

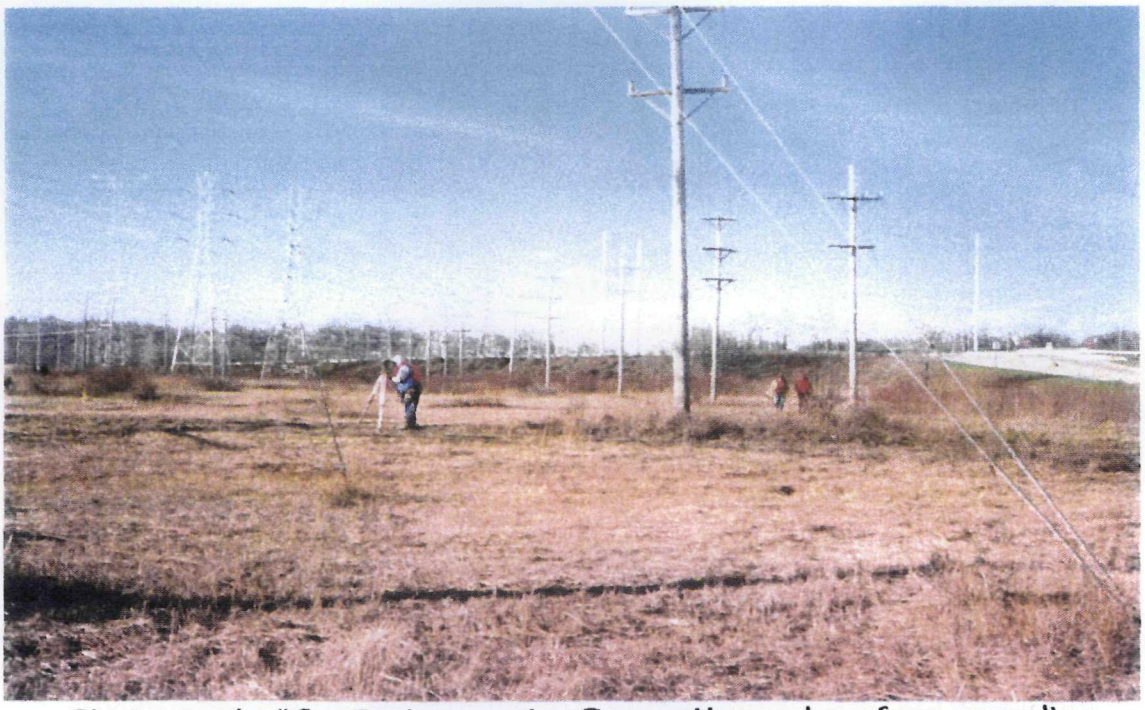
Photograph #1 - Facing south - Defoliating Site 2.

Photograph #2 - Facing south - Defoliating Site 3.

Photograph #3 - Facing southeast - Inspection for surface ACM on Site 2.

Photograph #4 - Facing south - Inspection for surface ACM on Site 3.

Photograph #5 - Facing east - Generating subsurface sampling grid and surveying locations where surface ACM was located at Site 2.



Photograph #6 - Facing west - Generating subsurface sampling grid and surveying locations where surface ACM was located at Site 3.

Photograph #7 - Facing northeast - Subsurface soil sampling using a Geoprobe drilling apparatus on Site 3.

Photograph #8 - Conducting the sol inspection process of one-foot soil intervals in the laboratory of the Former Johns Manville Manufacturing Facility.

Photograph #9 - Checking for hydric soils during the wetland delineation at Site 2.

Photograph #10 - Documenting the hydrophytic vegetation on Site 2 during the wetland delineation.

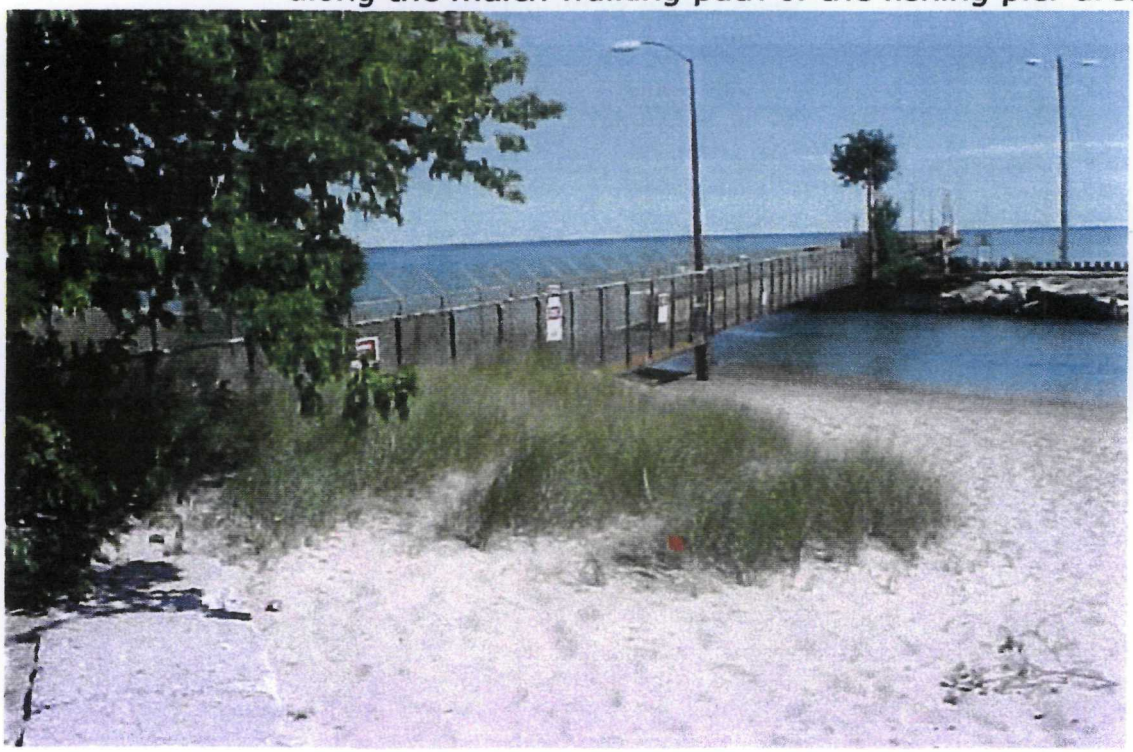
Photograph #11 - Overview of Plot 1 containing the state endangered Marram Grass (*Ammophila breviligulata*) on Site 2 within the fishing pier area.

Photograph #12 - View of Plot 1 containing the state endangered Marram Grass (*Ammophila breviligulata*) on Site 2 within the fishing pier area.

Photograph #13 - Overview of Plot 2 containing the state endangered Marram Grass (*Ammophila breviligulata*) on Site 2 within the fishing pier area.

Photograph #14 - View of Plot 2 containing the state endangered Marram Grass (*Ammophila breviligulata*) on Site 2 within the fishing pier area.

Photograph #15 - Overview of Plot 3 containing the state endangered Marram Grass (*Ammophila breviligulata*) on Site 2 along the mulch walking path of the fishing pier area.



Photograph #16 - Overview of Plot 4 containing the state endangered Marram Grass (*Ammophila breviligulata*) on Site 2 adjacent to the Commonwealth Edison outfall.

Photograph #17 - Overview of Plot 5 containing the state endangered Marram Grass (*Ammophila breviligulata*) on the dunes on the northeast side of Site 2.

Photograph #18 - View of Plot 5 containing the state endangered Marram Grass (*Ammophila breviligulata*) on the dunes on the northeast side of Site 2.

Photograph #19 - View of Plot 5 containing the state endangered Marram Grass (*Ammophila breviligulata*) on the dunes on the northeast side of Site 2.

Photograph #20 - View of Plot 6 containing the state endangered Marram Grass (*Ammophila breviligulata*) on the dunes on the east side of Site 2.

Photograph #21 - View of Plot 6 containing the state endangered Marram Grass (*Ammophila breviligulata*) on the dunes on the east side of Site 2.

Photograph #22 - Overview of Plot 7 containing the state endangered Marram Grass (*Ammophila breviligulata*) on the east side of Site 2.

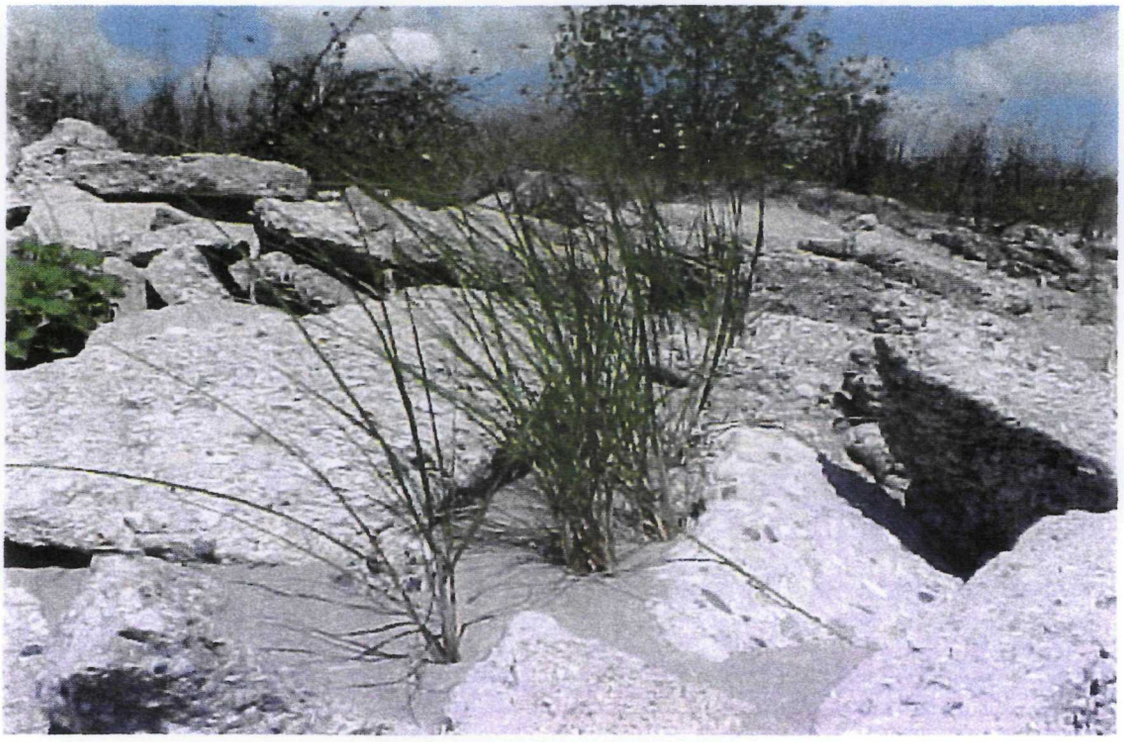
Photograph #23 - View of the northeast side of Plot 7 containing the state endangered Marram Grass (*Ammophila breviligulata*) on the east side of Site 2.

Photograph #24 - View of the east side of Plot 7 containing the state endangered Marram Grass (*Ammophila breviligulata*) on the east side of Site 2.

Photograph #25 - View of the southwest side of Plot 7 containing the state endangered Marram Grass (*Ammophila breviligulata*) on the east side of Site 2.

Photograph #26 - Overview of Plot 8 containing the state endangered Marram Grass (*Ammophila breviligulata*) and Seaside Spurge (*Chamaesyce polygonifolia*) and the state threatened Sea Rocket (*Cakile edentula*) on the beach of Site 2.

Photograph #27 - View of the dune habitat with the beach to the east and the upper terrace to the west on the east side of Site 2.



Photograph #28 - View of the state endangered Marram Grass (*Ammophila breviligulata*) growing on the dune on the east side of Site 2.

Photograph #29- View of the state threatened Sea Rocket (*Cakile edentula*) located throughout the beach area (Plot 8) on the east side of Site 2.

Photograph #30 - View of the state endangered Seaside Spurge (*Chamaesyce polygonifolia*) located throughout the beach area (Plot 8) on the east side of Site 2.

Photograph #31 - "Man-Induced" wetland located north of the fishing pier area on Site 2.

Photograph #32 - "Man-Induced" wetland located north of the fishing pier area on Site 2.

Photograph #33 - "Man-Induced" wetland located north of the fishing pier area on Site 2.

Photograph #34 - Northwest end of the "Scrub-Shrub" wetland located northeast of the fishing pier area on Site 2.

Photograph #35 - Northeast end of the "Scrub-Shrub" wetland located northeast of the fishing pier area on Site 2.

Photograph #36 - Northeast end of the "Scrub-Shrub" wetland located northeast of the fishing pier area on Site 2.

Photograph #37 - South end of the "Scrub-Shrub" wetland located east of the fishing pier area on Site 2.

Photograph #38 - Southwest end of the "Scrub-Shrub" wetland located east of the fishing pier area on Site 2.

Photograph #39 - Northeast portion of the "Scrub-Shrub" wetland located within the fishing pier area on Site 2.

Photograph #40 - Southern portion of the "Scrub-Shrub" wetland located within the fishing pier area on Site 2.

Photograph #41 - Southern portion of the "Scrub-Shrub" wetland located within the fishing pier area on Site 2.

Photograph #42 - Southwest portion of the "Scrub-Shrub" wetland located within the fishing pier area on Site 2.

Photograph #43 - Emergent drainageway on the northeast side of Site 3.

Photograph #44 - Emergent drainageway on the northwest side of Site 3.

DRAFT

Appendix D

Scope of Work for the Surface and Subsurface Characterization: "Exhibit A-2 Specification for Surface and Subsurface Characterization of Site 2 - Former Pan Am Games Shooting Range and Site 3 – Former JM Parking Area"

EXHIBIT A-2

SPECIFICATION

for

SURFACE and SUBSURFACE CHARACTERIZATION

of

SITE 2 - FORMER PAN AM GAMES SHOOTING RANGE

and

SITE 3 - FORMER JM PARKING AREA

EAST GREENWOOD AVENUE
WAUKEGAN, ILLINOIS

JOHNS MANVILLE PROJECT NUMBER
3781-0001

SPECIFICATION NO. 0001 - ENV1

Prepared by: Johns Manville
Roofing Systems Group Engineering
10100 West Ute Avenue
Littleton, CO 80127
Denny Clinton

Date: August 24, 1998

INDEX
Site 2 and Site 3 Characterization
Waukegan, IL

1.0 PROJECT SUMMARY 2

2.0 GENERAL PROJECT REQUIREMENTS

2.1 Project Schedule 2

2.2 National Contingency Plan Compliance 2

2.3 Work Plan, Health & Safety Plan 3

2.4 Access Agreements 3

2.5 Site Visit 4

2.6 Additional Borings and Sample Analysis 4

2.7 Underground Utilities 4

2.8 Proposal Expectations 4

3.0 SITE 2 - FORMER PAN AM GAMES SHOOTING RANGE

3.1 Site Description 5

3.2 Site 2 Characterization Plan Objective 5

3.3 Site 2 Characterization Plan 6

4.0 SITE 3 - FORMER JM PARKING AREA

4.1 Site Description 8

4.2 Site 3 Characterization Plan Objective 8

4.3 Site 3 Characterization Plan 8

1.0 PROJECT SUMMARY

Recent findings indicate the presence of asbestos containing material (ACM) at two sites (Sites 2 and 3, as described below) located immediately adjacent to and south of the JM manufacturing facility at Waukegan, Illinois. In addition, municipal waste materials and expended and unexpended small arms ammunition may be present at Site 2, which was used as a firing range during and after the 1959 Pan Am Games hosted by the City of Chicago. Concerns associated with the historic and present land use at these sites necessitate the collection and analysis of soil samples to determine the presence of asbestos containing materials (ACM) and lead, as more fully discussed below.

Per the attached letter dated July 10, 1998 from Brad Bradley of the U.S. Environmental Protection Agency (USEPA), the USEPA and Illinois Environmental Protection Agency (IEPA) have requested that conditions at these two sites be characterized so that remediation options can be evaluated (see Exhibit C).

The characterization tasks and objective(s) for each site are described separately, however, bidder responses to this Request for Proposal (RFP) should be based on combining tasks at both sites in a manner that economizes the use of personnel and equipment and meets the deadlines specified below.

2.0 GENERAL PROJECT REQUIREMENTS

2.1 Project Schedule

Site survey drawings delineating site boundaries and topography of Sites 2 and 3 will be completed (under separate contract) by September 17, 1998. Proposals for the work described in this specification must be received by JM no later than October 5, 1998. A contract will be awarded on October 9, 1998. Defoliation and surface and subsurface sampling shall begin no later than October 19, 1998. The preliminary report of site findings, including analytical data, shall be completed no later than November 20, 1998, and a final characterization report shall be provided to JM by December 7, 1998.

2.2 National Contingency Plan Compliance

In order to satisfy certain regulatory and legal aspects of this project, the work completed under this specification must be consistent with the National Contingency Plan (NCP).

Sampling and analysis activities completed under this specification must be performed according to USEPA and Illinois EPA approved methods and federal and state guidance.

Any laboratories used by the contractor for analyses must participate in a USEPA quality assurance/quality control program equivalent to that which is followed by the USEPA.

An occupational, safety, and health program consistent with the Occupational, Safety, and Health Act must be available for workers at the site.

2.3 Work Plan, Health and Safety Plan

Prior to the commencement of fieldwork, a written, comprehensive project Work Plan, and Health and Safety plan must completed by the contractor and submitted to Johns Manville for approval. Bidder response to this RFP shall indicate the anticipated levels of Personal Protective Equipment and procedures required to protect workers during completion of field work and sample analysis.

Existing information for Site 2 indicates that historical activities at this site may have included some level of municipal waste disposal. The contractor-designed Work Plan and Health and Safety Plan shall include all sampling procedures, field testing procedures, and employee protection procedures necessary to safely and accurately obtain representative samples of this potential municipal waste while protecting contractor's employees from exposure to constituents normally associated with this type of waste.

The Work Plan and Health and Safety Plan submitted and executed under this specification must be consistent with the National Contingency Plan and the Occupational, Safety, and Health Act.

2.4 Access Agreements

Johns Manville has obtained property access agreements from the City of Waukegan for Site 2 and from Commonwealth Edison for Sites 2 and 3 (See Exhibits D and E). These agreements allow JM and the contractor access to Sites 2 and 3 for the purpose of site characterization. Contractor must comply with and abide by all provisions set forth in the access agreements while completing the requirements of this specification.

2.5 Site Visit

Bidder is required to participate in a site visit to Site 2 and Site 3 prior to submittal of a response to this RFP.

2.6 Additional Borings and Sample Analysis

Contractor shall provide the unit price to obtain additional 3-sample borings that may be required beyond the anticipated minimums described below.

Contractor shall provide the unit price to conduct a bulk asbestos analysis on a one foot interval sample. Per the requirements described in the July 10, 1998 USEPA letter, the actual number of bulk asbestos analyses required for this characterization cannot be determined until field samples are obtained.

Contractor shall provide the unit price to conduct a total lead analysis on a one foot interval sample. Per the requirements described in the July 10, 1998 USEPA letter, the actual number of total lead analyses required for this characterization cannot be determined until field samples are obtained.

Contractor shall provide the price to conduct two (2) TCLP lead analyses on one foot interval samples per the requirements described in the July 10, 1998 USEPA letter.

2.7 Underground Utilities

Before subsurface sampling can begin at Sites 2 and 3, it is the contractor's responsibility to notify all required underground utility clearance services and to take all precautions necessary to ensure that the subsurface sampling activities WILL NOT damage any and all underground utilities located under Sites 2 and 3. Written certification by the contractor that the location of all underground utilities has been determined and that the utilities are safe from harm must be provided by the contractor to JM prior to the commencement of subsurface sampling.

2.8 Proposal Expectations

The costing section of the proposal shall include estimated man-hours, equipment hours, and crew sizes for each major characterization task, by Site (e.g., defoliation, sampling, surface inspection and cleanup, sample analysis, report preparation, drawing preparation, etc.). Resumes of the key personnel expected to manage and administer the work must also be included in the

proposal. It is expected that contractor personnel assignments will remain unchanged throughout the duration of the project. The contractor's project manager and point-of-contact assigned to the project shall be identified in the proposal. Each subcontractor (e.g., drilling contractor, laboratory, etc.) to be used for this project shall be identified, and, the necessary certifications (e.g., for ACM and TCLP analysis) for the lab shall be provided. All subcontractor costs and direct project costs such as travel, supplies, telephone, etc. shall be itemized.

In order to satisfy certain regulatory and legal aspects of this project, the work completed during this project shall be consistent with the National Contingency Plan.

If the contractor considers the proposed project schedule to be unreasonable, an alternative schedule suggestion shall be included in the proposal. If JM's proposed schedule is considered feasible, the contractor shall verify that fact in the proposal.

3.0 SITE 2 - FORMER PAN AM GAMES SHOOTING RANGE

3.1 Site Description

The area designated by the USEPA as Site 2 is an area located south of the southeast corner of the JM property. The site is situated primarily on City of Waukegan property (easterly extension of Greenwood Avenue right-of-way), and is currently managed by the Illinois Department of Natural Resources as an access to the Commonwealth Edison fishing pier. A shooting range was constructed on Site 2 in 1959, in conjunction with the Pan Am Games that were hosted by the City of Chicago in that year. A series of berms were constructed on the site to prevent bullets from leaving the range and traveling onto adjacent properties. The construction manager (a Major in the U.S. Army) arranged to use asbestos containing waste and soil from the JM facility as berm construction material. Site 2 is oriented east to west, extends from the southern boundary of the Johns Manville property line in a southerly direction for a distance of approximately 250 to 400 feet, and from the Lake Michigan shoreline approximately 1,500 feet in a westerly direction.

3.2 Site 2 Characterization Plan Objective

To define the areal and vertical extent of asbestos containing materials (ACM) and lead on the surface and in the top three feet of the area designated as Site 2. This will be accomplished through a site surface inspection and grid-defined

subsurface sampling and analysis plan. The purpose of the lead sampling is to determine the extent of lead in soil due to the accumulation of spent, and, perhaps, unexpended small arms ammunition used at the firing range. It is possible that some amount of municipal waste materials will be encountered during subsurface sampling activities. A separate sample of these materials shall be identified, retained and provided to the USEPA.

The results of this sampling will be summarized in a report that will be used to evaluate site conditions and remediation options. As more fully discussed below, concurrent with locating and marking the location of surficial ACM fragments, the contractor shall remove all visible ACM fragments, wrap them in polyurethane bags and properly dispose of all fragments. This will be done to minimize delays in the removal of this material from areas accessible to the public.

3.3 Site 2 Characterization Plan (Inspection, Sampling & analysis)

The contractor will complete inspection, sampling and analysis of the surface and subsurface soils at Site 2.

Prior to initiating any field inspections or sampling, the contractor must defoliate the site. After defoliating (by burning or by herbicide) the surface vegetative cover, the entire area of Site 2 shall be inspected for surface ACM materials. ACM fragments and fragment clusters found on the surface of Site 2 will be flagged, marked, located by survey with respect to North-South and East-West section lines, and identified and recorded as to size and type of fragment. After documenting surface ACM as described above, Contractor shall remove, deposit into polyurethane bags, and properly disposed of all surface ACM materials. The locations of all ACM fragments and fragment clusters shall be recorded by the contractor on a separate layer of the AUTOCAD-based topographic drawing provided by JM.

The subsurface sampling plan will be completed in a manner consistent with the July 10, 1998 Letter from USEPA (Exhibit C copy attached). Sample points will be placed on a grid approximately 100ft. X 100ft. in size, as determined by JM. Exact dimensions of the grid will be adjusted to reflect major site features and suspected concentrations of ACM materials. Based on JM's preliminary assessment of the USEPA specification and the dimensions of Site 2, it is anticipated that 80, 3 foot deep soil borings will be required.

The Contractor is expected to propose a recommended method for collecting the subsurface samples specified by the USEPA. Contractor shall separate, collect,

identify, inspect, preserve, and retain each 3 foot boring as 3 discrete, one foot samples. Each sample from each one foot increment shall be sieved and inspected to determine the presence of ACM fragments, expended and unexpended ammunition, and municipal waste. Results of sieve inspection and additional sample point observations such as presence and depth of groundwater shall be recorded.. After sieving, the samples from each one foot increment shall be stored in an appropriate sample container for subsequent lab analysis, as specified by USEPA. The contractor's proposal should include a description of the sample container that will be used for this purpose, and whether different containers are needed for samples to be analyzed for asbestos and for those samples to be analyzed for lead and/or municipal waste.

If sieve and inspection activities on the individual one foot increments indicate the possible presence of municipal waste, a sample of this suspected waste shall be separated, identified, and preserved for additional lab analysis by the USEPA. Actual lab analysis of these additional samples is NOT included in the scope of this specification.

The contractor shall survey each subsurface sampling point to determine sample point elevation and position. Each sample position shall be referenced to East-West and North-South section lines and sample elevation shall be referenced to a site benchmark determined by JM. The position and elevations of all sampling locations shall be recorded and identified by the contractor on a separate layer of the AUTOCAD-based topographic drawing provided by JM. Contractor shall supply an electronic copy and four (4) paper copies of the revised site drawings to JM.

A draft written report summarizing the tasks, field observations, sample analyses, and results of all work undertaken at Site 2 will be prepared by the consultant for review by JM. Following JM approval of the draft report, the written report shall be finalized and distributed to JM, USEPA, and IEPA. This report will be used to evaluate site remediation options.

The AUTOCAD-based topographic drawing of Site 2 supplied by JM shall be modified to show the following information:

1. Identification and areal position of all surface ACM fragments and fragment clusters. Areal position shall be referenced from North-South and East-West section lines.
2. Identification, elevation and areal position of all sub-surface sampling points. Elevation shall be referenced to a site benchmark determined by

JM, and areal position shall be referenced from North-South and East-West section lines.

4.0 SITE 3 - FORMER JM PARKING AREA

4.1 Site Description

The area designated by the USEPA as Site 3 is located south of Greenwood Avenue and aligned with the west end of the former JM Administration Building at the southern end of the JM property. This area is approximately 200 feet in the north-south dimension and 350 feet in the east-west dimension, with the northern boundary of Site 3 beginning at the south edge of the pavement of Greenwood Ave.

4.2 Site 3 Characterization Plan Objective

To define the areal and vertical extent of asbestos containing materials (ACM) on the surface and in the top three feet of the area designated as Site 3. This will be accomplished through a site surface inspection and a grid-defined subsurface sampling and analysis plan.

The results of this sampling will be summarized in a report that will be used to evaluate site conditions and remediation options. As more fully discussed below, concurrent with locating and marking the location of surficial ACM fragments, the contractor shall remove all visible ACM fragments, wrap them in polyurethane bags, and properly dispose of all fragments. This will be done to minimize delays in the removal of this material from areas accessible to the public.

4.3 Site 3 Characterization Plan

The contractor will complete inspection, sampling, and analysis of the surface and subsurface soils at Site 3.

Prior to initiating any field inspections or sampling, Site 3 must be defoliated.. Defoliation of Site 3 will be completed by Commonwealth Edison. After defoliation is complete, the Contractor shall inspect the entire area of Site 3 for surface ACM materials. ACM fragments and fragment clusters found on the surface of Site 3 will be flagged, marked, located by survey with respect to North-South and East-West section lines, and identified and recorded as to size and type of fragment. After documenting surface ACM as described, contractor

shall remove, deposit into polyurethane bags, and properly dispose of all surface ACM materials. The locations of all ACM fragments and fragment clusters shall be recorded by the contractor on a separate layer of the AUTOCAD-based topographic drawing provided by JM.

The subsurface sampling plan will be completed in a manner consistent with the July 10, 1998 Letter from USEPA (copy attached). Sample points will be placed on a grid approximately 50ft. X 50ft. in size, as determined by JM. Exact dimensions of the grid will be adjusted to reflect major site features and suspected concentrations of ACM materials. Based on JM's preliminary assessment of the USEPA specification and the dimensions of Site 3, it is anticipated that 50, 3 foot deep soil borings will be required. The Contractor is expected to propose a recommended method for collecting the subsurface samples specified by the USEPA. Contractor shall separate, collect, identify, inspect, preserve, and retain each 3 foot boring as 3 discrete, one foot samples. Each sample from each one foot increment shall be sieved to determine the presence of ACM fragments. Results of sieve investigation and additional sample point observations such as presence and depth of groundwater shall be recorded. After sieving, the samples from each one foot increment shall be stored in an appropriate sample container for subsequent lab analysis, as specified by USEPA. The contractor's proposal should include a description of the sample container that will be used for this purpose.

The contractor shall survey each subsurface sampling point to determine sample point elevation and position. Each sample position shall be referenced to East-West and North-South section lines and sample elevations shall be referenced to a site benchmark determined by JM. The position and elevations of all sampling locations shall be recorded and identified by the contractor on a separate layer of the AUTOCAD-based topographic drawing provided by JM. Contractor shall supply an electronic copy and four (4) paper copies of the revised site drawings to JM.

A draft written report summarizing the tasks, field observations; sample analyses, and results of all work undertaken at Site 3 will be prepared by the contractor for review by JM. Following JM approval of the draft report, the written report shall be finalized and distributed to JM, USEPA, and IEPA. This report will be used to evaluate site remediation options.

The AUTOCAD-based topographic drawing of Site 3 supplied by JM shall be modified to show the following information:

1. Identification and areal position of all surface ACM fragments and fragment clusters. Areal position shall be referenced from North-South and East-West section lines.

2. Identification, elevation and areal position of all sub-surface sampling points. Elevation shall be referenced to a site benchmark determined by JM, and areal position shall be referenced from North-South and East-West section lines.

DRAFT

Appendix E

Subsurface Characterization – Polarized Microscopy Analyses Data– Site 2 and Site 3 AND *Soil Investigation For Asbestos-Containing Materials, Waukegan, Illinois* - RCM Laboratories

Subsurface Characterization Polarized Light Microscopy Analyses Data - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DRAFT

BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	RESULT
B2-03	0-1'	ND
B2-03	1-2'	ND
B2-03	2-3'	ND
B2-04 REDO	0-1'	ND
B2-04 REDO	1-2'	ND
B2-04 REDO	2-3'	ND
B2-14	0-1'	ND
B2-14	1-2'	0.5 % Chrysotile
B2-14	2-3'	ND
B2-16	0-1'	ND
B2-16	1-2'	ND
B2-16	2-3'	ND
B2-19	0-1'	ND
B2-19	1-2'	ND
B2-19	2-3'	ND
B2-27	0-1'	0.1 % Chrysotile 0.4 % Amosite
B2-27	1-2'	ND
B2-27	*2-3'	ND
B2-30	0-1'	ND
B2-30	1-2'	ND
B2-30	2-3'	ND
B2-31	0-1'	ND
B2-31	1-2'	ND
B2-31	2-3'	ND
B2-33	0-1'	ND
B2-33	1-2'	ND
B2-33	2-3'	ND
B2-34	0-1'	ND
B2-34	1-2'	ND
B2-34	2-3'	ND
B2-35	0-1'	ND
B2-35	1-2'	ND
B2-35	2-3'	1.0 % Chrysotile 0.5 % Amosite
B2-36	0-1'	ND
B2-36	1-2'	ND
B2-36	2-3'	ND
B2-37	0-1'	ND
B2-37	1-2'	ND
B2-37	2-3'	ND
B2-38	0-1'	ND
B2-38	1-2'	ND
B2-38	2-3'	ND
B2-40	0-1'	ND
B2-40	1-2'	ND
B2-40	2-3'	ND
B2-41	0-1'	ND
B2-41	1-2'	ND
B2-41	2-3'	ND

Subsurface Characterization Polarized Light Microscopy Analyses Data - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DRAFT

BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	RESULT
B2-42	0-1'	ND
B2-42	1-2'	0.1 % Chrysotile 0.1 % Amosite
B2-42	2-3'	1.0 % Chrysotile
B2-43	0-1'	ND
B2-43	1-2'	ND
B2-46	0-1'	ND
B2-46	1-2'	0.6 % Chrysotile 0.1 % Crocidolite
B2-46	2-3'	ND
B2-47 REDO	0-1'	0.1 % Chrysotile 0.1 % Amosite
B2-47 REDO	1-2'	ND
B2-47 REDO	2-3'	0.2 % Amosite
B2-49	0-1'	ND
B2-49	1-2'	ND
B2-49	2-3'	ND
B2-50	0-1'	ND
B2-50	1-2'	0.1 % Chrysotile
B2-50	2-3'	0.5 % Chrysotile
B2-52	0-1'	ND
B2-52	1-2'	ND
B2-52	2-3'	ND
B2-52 REDO	0-1'	ND
B2-52 REDO	1-2'	ND
B2-52 REDO	2-3'	ND
B2-54	0-1'	ND
B2-54	1-2'	ND
B2-54 REDO	0-1'	ND
B2-54 REDO	1-2'	0.2 % Chrysotile
B2-54 REDO	2-3'	0.5 % Chrysotile 0.1 % Amosite
B2-56	0-1'	ND
B2-56	1-2'	ND
B2-59	0-1'	ND
B2-59	1-2'	ND
B2-61	0-1'	ND
B2-61	1-2'	ND
B2-61	2-3'	ND
B2-62	0-1'	ND
B2-62	1-2'	ND
B2-62	2-3'	ND
B2-63	0-1'	ND
B2-63	1-2'	ND
B2-63	2-3'	ND
B2-64	0-1'	ND
B2-64	1-2'	ND
B2-64	2-3'	ND
B2-69	0-1'	ND
B2-69	1-2'	ND

Subsurface Characterization Polarized Light Microscopy Analyses Data - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DRAFT

BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	RESULT
B2-69 REDO	0-1'	ND
B2-69 REDO	1-2'	ND
B2-69 REDO	2-3'	ND
B2-70	0-1'	ND
B2-70	1-2'	ND
B2-70	2-3'	ND
B2-71	0-1'	ND
B2-71	1-2'	ND
B2-71	2-3'	ND
B2-72	0-1'	ND
B2-72	1-2'	0.2 % Chrysotile
B2-72	2-3'	ND
B2-75	0-1'	0.1 % Chrysotile
B2-75	1-2'	ND
B2-75	2-3'	ND
*B2-76	1-2'	ND
*B2-76	2-3'	ND
B2-77	0-1'	ND
B2-77	1-2'	ND
B2-77	2-3'	ND
B2-78	0-1'	ND
B2-78	1-2'	ND
B2-78	2-3'	ND
B2-79	0-1'	ND
B2-79	1-2'	ND
B2-79	2-3'	ND
B2-80	0-1'	ND
B2-80	1-2'	ND
B2-80	2-3'	ND
B2-81	0-1'	ND
B2-81	1-2'	ND
B2-81	2-3'	ND
AB2-01	1-2'	0.5 % Chrysotile 1.0 % Amosite
AB2-01 REDO	2-3'	5.0 % Chrysotile 2.0 % Amosite
AB2-02	0-1'	5.0 % Chrysotile
AB2-04	1-2'	ND
AB2-05	1-2'	0.5 % Chrysotile
AB2-05	2-3'	0.1 % Chrysotile
AB2-06	1-2'	0.5 % Chrysotile 0.5 % Crocidolite
AB2-06	2-3'	0.5 % Chrysotile
AB2-07	1-2'	0.5 % Chrysotile
AB2-08	2-3'	1.0 % Chrysotile
AB2-09	0-1'	20-30 % Chrysotile
AB2-10	1-2'	1.0 % Chrysotile
AB2-10	2-3'	1.0 % Chrysotile
AB2-11	2-3'	2.0 % Chrysotile

Subsurface Characterization Polarized Light Microscopy Analyses Data - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DRAFT

BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	RESULT
AB2-12	1-2'	1.0 % Chrysotile 0.5 % Amosite
AB2-12	2-3'	3.0 % Chrysotile
AB2-13	1-2'	2.0 % Chrysotile
AB2-13	2-3'	5.0 % Chrysotile
AB2-15	1-2'	5.0 % Chrysotile
AB2-17	2-3'	1.0 % Chrysotile
AB2-18	2-3'	1.0 % Chrysotile 1.0 % Crocidolite
B2-21	2-3'	<1 % Chrysotile <1 % Amosite <1% Crocidolite
AB2-22	1-2'	1.0 % Chrysotile 1.0 % Crocidolite
AB2-22	2-3'	1.0 % Amosite
B2-23	1-2'	10-15 % Chrysotile 1-2 % Crocidolite
AB2-25	1-2'	0.5 % Chrysotile 1.0 % Amosite 1.0 % Crocidolite
AB2-25	2-3'	20.0 % Chrysotile
AB2-26	2-3'	10.0 % Chrysotile
AB2-27	2-3'	0.1 % Chrysotile
AB2-29	2-3'	0.5 % Chrysotile 0.1 % Amosite
AB2-45	2-3'	2.0 % Amosite
B2-47	1-2'	1-5 % Chrysotile 1-5 % Crocidolite
AB2-51	1-2'	5.0 % Chrysotile 0.1 % Crocidolite
AB2-53	0-1'	1.0 % Chrysotile 0.1 % Crocidolite
AB2-54 REDO REDO	0-1'	15-25 % Chrysotile
AB2-54 REDO REDO	1-2'	15-25 % Chrysotile

"B2" - Boring ID Numbers that begin with a "B" represent intervals that were submitted for bulk asbestos analysis where no visible ACM was observed at any interval of the four-foot sample core.

"AB2" - Boring ID Numbers that begin with a "AB" represent intervals that were submitted for bulk asbestos analysis where visible ACM was observed within that one-foot interval.

"*" - B2-27 (2-3') contained visible ACM. Therefore, B2-27 (0-1'), (1-2') and (2-3') should not have been submitted for bulk asbestos analysis.

"*" - B2-76 - a (0-1') interval should have been submitted along with (1-2') and (2-3') and was not.

Subsurface Characterization Polarized Light Microscopy Analyses Data - Site 3
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DRAFT

BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	RESULT
B3-01	0-1'	ND
B3-01	1-2'	ND
B3-01 REDO	0-1'	ND
B3-01 REDO	1-2'	ND
B3-01 REDO	2-3'	ND
B3-02	0-1'	ND
B3-02	1-2'	ND
B3-02	2-3'	0.5 % Chrysotile
B3-03	0-1'	ND
B3-03	1-2'	1.0 % Chrysotile
B3-03	2-3'	ND
B3-04	0-1'	ND
B3-04	1-2'	ND
B3-04 REDO	0-1'	ND
B3-04 REDO	1-2'	0.2 % Chrysotile
B3-04 REDO	2-3'	ND
B3-05	0-1'	ND
B3-05	1-2'	ND
B3-05	2-3'	ND
B3-06	0-1'	ND
B3-06	1-2'	ND
B3-06	2-3'	ND
B3-07	0-1'	ND
B3-07	1-2'	ND
B3-07	2-3'	ND
B3-08	0-1'	ND
B3-08	1-2'	ND
B3-08	2-3'	ND
B3-09	0-1'	ND
B3-09	1-2'	ND
B3-09	2-3'	ND
B3-10	0-1'	ND
B3-10	1-2'	ND
B3-10	2-3'	ND
B3-11	0-1'	ND
B3-11	1-2'	ND
B3-11	2-3'	ND
B3-12	0-1'	ND
B3-12	1-2'	ND
B3-12 REDO	0-1'	0.5 % Chrysotile 0.1 % Amosite
B3-12 REDO	1-2'	ND
B3-12 REDO	2-3'	ND
B3-13	0-1'	ND
B3-13	1-2'	ND
B3-13 REDO	0-1'	ND
B3-13 REDO	1-2'	ND
B3-14	0-1'	1.0 % Amosite
B3-14	1-2'	ND
B3-14 REDO	0-1'	ND
B3-14 REDO	1-2'	ND
B3-14 REDO	2-3'	ND

Subsurface Characterization Polarized Light Microscopy Analyses Data - Site 3
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DRAFT

BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	RESULT
B3-15	0-1'	1.0 % Chrysotile 0.2 % Crocidolite
B3-15	1-2'	ND
B3-15 REDO	0-1'	ND
B3-15 REDO	1-2'	ND
B3-15 REDO	2-3'	ND
B3-17	0-1'	ND
B3-17	1-2'	ND
B3-17 REDO	0-1'	ND
B3-17 REDO	1-2'	ND
B3-17 REDO	2-3'	ND
B3-18	0-1'	ND
B3-18	1-2'	ND
B3-18	2-3'	ND
B3-19	0-1'	ND
B3-19	1-2'	ND
B3-19	2-3'	ND
B3-20	0-1'	ND
B3-20	1-2'	ND
B3-20	2-3'	ND
B3-21	0-1'	ND
B3-21	1-2'	ND
B3-21	2-3'	ND
B3-23	0-1'	ND
B3-23	1-2'	ND
B3-23	2-3'	ND
B3-24	0-1'	ND
B3-24	1-2'	ND
B3-24 REDO	1-2'	ND
B3-24 REDO	2-3'	ND
B3-25 REDO	0-1'	ND
B3-25 REDO	1-2'	0.5 % Chrysotile
B3-25 REDO	2-3'	ND
B3-26	0-1'	ND
B3-26	1-2'	ND
B3-26	2-3'	ND
B3-27	0-1'	ND
B3-27	1-2'	ND
B3-27	2-3'	ND
B3-28	0-1'	ND
B3-28	1-2'	ND
B3-28	2-3'	ND
B3-29	0-1'	ND
B3-29	1-2'	ND
B3-29 REDO	0-1'	ND
B3-29 REDO	1-2'	ND
B3-30	0-1'	ND
B3-30	1-2'	ND
B3-30	2-3'	ND

Subsurface Characterization Polarized Light Microscopy Analyses Data - Site 3 **DRAFT**
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	RESULT
B3-31	0-1'	ND
B3-31	1-2'	ND
B3-31	2-3'	ND
B3-32	0-1'	ND
B3-32	1-2'	ND
B3-32	2-3'	ND
B3-33	0-1'	ND
B3-33	1-2'	0.5 % Chrysotile
B3-33 REDO	0-1'	ND
B3-33 REDO	1-2'	0.1 % Amosite
B3-33 REDO	2-3'	0.9 % Chrysotile
B3-34	0-1'	ND
B3-34	1-2'	ND
B3-34	2-3'	ND
B3-35	0-1'	ND
B3-35	1-2'	ND
B3-35	2-3'	ND
B3-36	0-1'	ND
B3-36	1-2'	ND
B3-36	2-3'	ND
B3-37	0-1'	ND
B3-37	1-2'	ND
B3-37	2-3'	ND
B3-39	0-1'	ND
B3-39	1-2'	ND
B3-39	2-3'	ND
B3-40	0-1'	ND
B3-40	1-2'	ND
B3-40	2-3'	0.5 % Chrysotile
B3-42	0-1'	ND
B3-42	1-2'	ND
B3-42	2-3'	ND
B3-43	0-1'	ND
B3-43	1-2'	ND
B3-43	2-3'	ND
B3-44	0-1'	ND
B3-44	1-2'	ND
B3-44	2-3'	ND
B3-47	0-1'	ND
B3-47	1-2'	ND
B3-47	2-3'	ND
B3-48	0-1'	0.5 % Chrysotile
B3-48	1-2'	ND
B3-48	2-3'	ND
AB3-16	0-1'	2.0 % Chrysotile
AB3-16	1-2'	1.0 % Chrysotile
AB3-16	2-3'	0.3 % Chrysotile
AB3-22	0-1'	1.0 % Chrysotile 0.5 % Crocidolite
AB3-25	1-2'	1.0 % Chrysotile

Subsurface Characterization Polarized Light Microscopy Analyses Data - Site 3
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DRAFT

BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	RESULT
AB3-38	0-1'	2.0% Amosite 1.0% Crocidolite
AB3-38	1-2'	10.0% Chrysotile 10.0% Crocidolite
AB3-45	2-3'	2.0 % Chrysotile
AB3-46	2-3'	1.5 % Chrysotile
AB3-50	1-2'	5.0 % Chrysotile
AB3-50 REDO	2-3'	2.0 % Chrysotile

"B3" - Boring ID Numbers that begin with a "B" represent intervals that were submitted for bulk asbestos analysis where no visible ACM was observed at any interval of the four-foot sample core.

"AB3" - Boring ID Numbers that begin with a "AB" represent intervals that were submitted for bulk asbestos analysis where visible ACM was observed within that one-foot interval.

SOIL INVESTIGATION FOR ASBESTOS-CONTAINING MATERIALS

WAUKEGAN, ILLINOIS

PREPARED FOR:

Mr. Jeff Stringer

ELM Consulting, L.L.C.

18-2 E. Dundee Road, Suite 100

Barrington, IL 60010

January 7, 1999

PREPARED BY:

REGULATORY
COMPLIANCE
MANAGEMENT

(RCM LABORATORIES, INC.)
5400 EAST AVENUE
COUNTRYSIDE, ILLINOIS 60525

ENVIRONMENTAL SERVICES FOR REGULATORY COMPLIANCE & MANAGEMENT

221 North LaSalle Suite 1108
Chicago, Illinois 60601
(312) 984-9050
Fax (312) 984-5057

RCM
REGULATORY COMPLIANCE MANAGEMENT
RCM LABORATORIES

5400 East Avenue
Countryside, Illinois 60525
(708) 485-8600
Fax (708) 485-8607

January 7, 1999

Mr. Jeff Stringer
ELM Consulting, L.L.C.
18-2 E. Dundee Road, Suite 100
Barrington, IL 60010

RE: Soil Investigation for Asbestos-Containing Materials
Waukegan, Illinois

Dear Mr. Stringer,

RCM Laboratories, Inc. was contracted by ELM Consulting, L.L.C. to perform asbestos inspection and air sampling services for the soil investigation project in Waukegan, Illinois. Our portion of the project has been completed and enclosed are the laboratory data sheets as well as air monitoring results. This project involved a surface and sub-surface soil investigation for asbestos-containing materials at two undeveloped sites in Waukegan, Illinois. The first site is located at Greenwood Avenue and Pershing, and the second site is located at Greenwood Avenue and Lake Michigan.

Prior to the soil investigation, the foliage on each site was mowed by Signature Landscaping to expose the soil surface. During the mowing process, which occurred on December 2, 1998, air sampling for asbestos fibers was conducted, and a Negative Exposure Assessment was developed (See Attachment 1). All air sample analyses were performed on-site using NIOSH Method 7400. Results of air monitoring are presented in Attachment 2.

Once the foliage was mowed, each site was visually inspected for suspect asbestos-containing material (SACM) at the soil surface. Identified SACM, which included non-friable asbestos-cement board (transite), non-friable bituminous roofing materials, and non-friable asbestos-ore types of material, were flagged and the locations were noted. Following this investigation, Aspen Construction Services, an asbestos abatement contractor, performed the cleanup of identified SACM on the dates of December 3rd and 4th. The cleanup involved removing the flagged SACM, and placing the wet material into properly labeled asbestos waste bags. Disposal of this material was managed by the Johns-Manville facility. For the cleanup process, an IDPH licensed Asbestos Worker was used, and a Negative Exposure Assessment was developed for the process (See Attachment 1).

Terra-Trace Environmental Services was then contracted to take soil core samples from designated areas of the two sites. The goal of the core sampling was to recover at least three feet of soil within each core. When less than three feet of soil was recovered, another core sample was taken from the same location to obtain three feet. For this process, which occurred from December 9th to December 11th, an environmental air sample was placed on the drilling rig, and a Negative Exposure Assessment was developed (See Attachment 1). All air sample analyses were performed on-site using NIOSH Method 7400. Results of air monitoring are presented in Attachment 2.

The soil core samples were then taken to a designated laboratory area within the Johns-Manville facility for inspection. Each soil core sample was removed from its sheath, separated into one-foot intervals, and inspected by hand for SACM's. When SACM was identified, the material was bagged separately and labeled accordingly. If no SACM was identified in a particular interval, a representative bulk sample was taken for laboratory analysis by Polarized Light Microscopy (PLM). The inspection process occurred on the dates of December 9th, 10th, 11th, and 14th. During the inspection process, an environmental air sample was taken within the laboratory, and a Negative Exposure Assessment was developed (See Attachment 1). All air sample analyses were performed on-site using NIOSH Method 7400, and are presented in Attachment 2. The bulk samples were taken to our in-house NVLAP accredited laboratory and analyzed by PLM with dispersion staining, per EPA's "Method for the Determination of Asbestos in Bulk Building Materials", EPA/600/R-93/116 July, 1993. The results of laboratory analysis of bulk samples are presented in Attachment 3.

It has been a pleasure being of service to ELM Consulting, L.L.C. Should you have any questions regarding this report, please call at your convenience.

Sincerely,

RCM Laboratories, Inc.

Ronald J. Baehus
Project Manager

ATTACHMENT 1
NEGATIVE EXPOSURE ASSESSMENTS

NEGATIVE EXPOSURE ASSESSMENT

Date:	December 3, 1998
Work Performed By:	Signature Landscaping
Location:	Waukegan, Illinois: One Site at Pershing and Greenwood, One Site at Greenwood and Lake Michigan.
Scope of Work:	Mowing down of foliage on sites.
Type of Material:	Non-friable asbestos-cement board (transite) and various non-friable, bituminous roofing materials are present on the surface of both sites.
Air Monitoring Data:	On the date of December 2, 1998, a personal air sample was placed in the breathing zone of the tractor operator. During this shift, the tractor was used on each site for approximately 2 hours. Results of the air monitoring indicated an exposure of 0.037 fibers/cc, which is below the current PEL for asbestos fibers of 0.1 fibers/cc.
Objective Data:	The ACM debris consists entirely of non-friable materials. Although the debris is broken up, the material remains intact, and is wet due to recent weather conditions. The debris is laying on the surface of each site will not come into contact with the tractor/mower blades which could render the materials friable. The blades of the mower are set at approximately 6 inches. Given these facts, we feel that the worker operating the tractor will not be exposed to asbestos fibers at or above the PEL of 0.1 fiber/cc.
Assessment By:	Ronald J. Bachus RCM Laboratories, Inc.

NEGATIVE EXPOSURE ASSESSMENT

Date:	December 3, 1998
Work Performed By:	Aspen Construction Services
Location:	Waukegan, Illinois: One Site at Pershing and Greenwood, One Site at Greenwood and Lake Michigan.
Scope of Work:	Surface cleanup of asbestos-containing material (ACM) debris located throughout the two sites which are currently undeveloped.
Type of Material:	Non-friable asbestos-cement board (transite) and various non-friable, bituminous roofing materials.
Employee Training:	40-hour EPA Asbestos Worker training/ Illinois Department of Public Health (IDPH) licensed Asbestos Worker.
Procedures:	The ACM debris is located on the surface in many areas of each site. The locations of the debris have been noted, and will accordingly be cleaned up and properly disposed of. The asbestos worker will go to each noted location of ACM debris, and place the debris into properly labeled asbestos waste bags, and then double-bag the waste. Due to recent weather conditions, the debris is already wet and will not require re-wetting.
Objective Data:	The ACM debris consists entirely of non-friable materials. Although the debris is broken up, the material remains intact. The debris is laying on the surface of each site and will merely have to be picked-up by hand and placed into waste bags. The material will not have to be broken, crushed, or in any other way damaged so as to render the material non-intact. We feel, given the material type and work practices, that the worker will not be exposed to asbestos fibers at or above the PEL of 0.1 fiber/cc.
Assessment By:	Ronald J. Bachus RCM Laboratories, Inc.

NEGATIVE EXPOSURE ASSESSMENT

Date:	December 10, 1998
Work Performed By:	Terra-Trace Environmental Services
Location:	Waukegan, Illinois: One Site at Pershing and Greenwood, One Site at Greenwood and Lake Michigan.
Scope of Work:	Drilling to obtain soil samples.
Type of Material:	Non-friable asbestos-cement board (transite) and various non-friable, bituminous roofing materials are present on the surface and beneath the surface of both sites.
Air Monitoring Data:	On the date of December 9, 1998, an environmental air sample was placed on the drilling rig during operation. Results of the air monitoring were 0.011 fibers/cc over a time period of 325 minutes. Although these results can not be used to directly determine personal exposure, they likely represent the potential exposures to employees.
Objective Data:	The ACM debris consists entirely of non-friable materials. Although the debris is broken up, the material remains intact, and is wet due to recent weather conditions. The debris is laying on the surface and beneath the surface of each site, and will likely be contacted by the drilling rig during operation. However, due to the nature of the material present, the drilling operation will not cause the materials to become friable. For these reasons, we feel that the workers operating the drilling rig will not be exposed to asbestos fibers at or above the PEL of 0.1 fiber/cc.
Assessment By:	Ronald J. Baehus RCM Laboratories, Inc.

NEGATIVE EXPOSURE ASSESSMENT

Date:	December 10, 1998
Work Performed By:	RCM Laboratories, Inc. & ELM Consulting, L.L.C.
Location:	Waukegan, Illinois: Johns-Manville Plant
Scope of Work:	Inspection of soil core samples for asbestos-containing materials.
Type of Material:	Non-friable asbestos-cement board (transite), various non-friable, bituminous roofing materials and asbestos-ore type of material are present in the soil core samples.
Air Monitoring Data:	On the date of December 9, 1998, an environmental air sample was placed inside the designated laboratory area within the Johns-Manville Plant during the inspection process. Results of the air monitoring were 0.038 fibers/cc over a time period of 230 minutes. Although these results can not be used to directly determine personal exposure, they likely represent the potential exposures to employees.
Objective Data:	The ACM debris consists entirely of non-friable materials. Although the debris is broken up, the material remains intact, and is wet due to recent weather conditions. The debris has been found at various levels with the soil core samples. During the inspection process, the covering of each core sample is removed, and the core samples are inspected by hand for ACM debris. This process does not involve disturbance of ACM which may cause the materials to become friable. For this process, we feel that the individuals performing the inspections will not be exposed to asbestos fibers at or above the PEL of 0.1 fiber/cc.
Assessment By:	Ronald J. Bachus RCM Laboratories, Inc.

ATTACHMENT 2
AIR SAMPLING RESULTS

AIR SAMPLING DATA SHEET
PHASE CONTRAST MICROSCOPY

Client:	BLM Consulting, LLC	Client Job #:	N/A	Sampled By:	Ron Bachus	Magnification	400	0.00785	Field Area
Location:	Wakegan, Illinois	RCM Project #:	980900	Analyzed By:	Ron Bachus	Field Diameter	100	0.3	Interlab C.V.
Date:	Wednesday, December 2, 1998	Day:	One	Analyzed At:	Onsite	Phase Test	X	385	B.F.A.*

RCM Sample Number	Client Sample Number	Activity	Sample Type	Sample Description	Resp. Type	Time Start	Time Stop	Sample Time (min)	Flow Rate (liters/min) Start	End	Avg	Volume (liters)	Total Fibers	Total Fields	Fibers per CC	90% Upper Conf.
980900 -A1			PRS1	Salvador Carrillo - Mowing Lot At Pershing & Greenwood		9:25 AM	11:15 AM	110	2	2	2.0	220	40.5	100	0.090	0.220
980900 -B1				Field Blank									1.0	100		
980900 -C1				Field Blank									0.0	100		
980900 -D1			PRS1	Salvador Carrillo - Mowing Lot In Shooting Range		1:20 PM	3:05 PM	105	2	2	2.0	210	32.0	100	0.075	0.184

PRS1	Salvador Carrillo	Eight Hour Time Weighted Average	0.037
PRS2			0.000
PRS3			0.000

All air samples are analyzed by NIOSH 7400 Method "A" Counting Rules

The Detection Limit is 5.5 Fibers/100 Fields

IDPH Clearance Level is 0.01 f/cc

The OSHA PEL is 0.1 f/cc

ACTIVITY

PREP-site prep
REM-removal
GLBG-glovebag
CLN-clean up
BGLO- bag loadout

SAMPLE TYPE

BK-background
PRS-personal
CL-clearance
ENV-environmental
IC-inside containment
OC-outside containment

RESPIRATOR TYPE

HM-half mask
FF-full face
SA-supplied air respirator
PAPR-powered air purifying respirator

Copyright © 1998 RCM Laboratories, Inc.

REGULATORY COMPLIANCE MANAGEMENT
(RCM Laboratories, Inc.)

AIR SAMPLING DATA SHEET
PHASE CONTRAST MICROSCOPY

Client:	ELM Consulting, LLC	Client Job #:	N/A	Sampled By:	Ron Bachus	Magnification	400	0.00785	Field Area
Location:	Wakegan, Illinois	RCM Project #:	980900	Analyzed By:	Ron Bachus	Field Diameter	100	0.3	Interlab C.V.
Date:	Wednesday, December 9, 1998	Day:	Two	Analyzed At:	Onsite	Phase Test	X	385	E.F.A.*

RCM Sample Number	Client Sample Number	Activity	Sample Type	Sample Description	Resp. Type	Time Start	Time Stop	Sample Time *(min)*	Flow Rate *(liters/min)* Start	End	Avg	Volume *(liters)*	Total Fibers	Total Field1s	Fibers per CC	90% Upper Conf.
980900 -A2			ENV	Drilling Rig		9:50 AM	3:15 PM	325	2	2	2.0	650	15.0	100	0.011	0.028
980900 -B2			ENV	Inside Laboratory		11:40 AM	3:30 PM	230	2	2	2.0	460	36.0	100	0.038	0.094
980900 -C2				Field Blank									0.0	100		
980900 -D2				Field Blank									0.0	100		

PRS1		Eight Hour Time Weighted Average	0.000
PRS2			0.000
PRS3			0.000

All air samples are analyzed by NIOSH 7400 Method "A" Counting Rules — The Detection Limit is 5.5 Fibers/100 Fields — IDPH Clearance Level is 0.01 f/cc — The OSHA PEL is 0.1 f/cc

ACTIVITY
PREP-site prep
CLN-clean up
REM-removal
BGLO- bag loadout
GLBG-glovebag

SAMPLE TYPE
BK-background
ENV-environmental
PRS-personal
IC-inside containment
CL-clearance
OC-outside containment

RESPIRATOR TYPE
HM-half mask
FF-full face
SA-supplied air respirator
PAPR-powered air purifying respirator

Copyright © 1998 RCM Laboratories, Inc.

REGULATORY COMPLIANCE MANAGEMENT
(RCM Laboratories, Inc.)

ATTACHMENT 3
BULK SAMPLE LABORATORY RESULTS

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
AB2-01	1'-2' Grey Soil Material	0.5 % Chrysotile 1.0 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.5 % Binder/Filler
AB2-01	2'-3' Redo Beige Soil Material	5.0 % Chrysotile 2.0 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	93.0 % Binder/Filler
AB2-02	0'-1' Grey Soil Material	5.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	95.0 % Binder/Filler
B2-03	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-03	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-03	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-04	0'-1' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-04	1'-2' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
AB2-04	1'-2' Brown Friable Debris Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	5.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	95.0 % Binder/Filler
B2-04	2'-3' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
AB2-05	1'-2' Beige Soil Material	0.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler
AB2-05	2'-3' Beige Soil Material	0.1 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose 10.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	89.9 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
AB2-06	1'-2' Off-White Soil Material	0.5 % Chrysotile ND % Amosite 0.5 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
AB2-06	2'-3' Beige Soil Material	0.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler
AB2-07	1'-2' Beige Soil Material	0.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler
AB2-08	2'-3' Beige Soil Material	1.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose 2.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler
AB2-09	0'-1' Black Non-Friable Fibrous Material	20-30 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose 5.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	70.0 % Binder/Filler
AB2-10	1'-2' Beige Soil Material	1.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stenger
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
AB2-10	2'-3' Beige Soil Material	1.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
AB2-11	2'-3' Beige Soil Material	2.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose 10.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	88.0 % Binder/Filler
AB2-12	1'-2' Beige Soil Material	1.0 % Chrysotile 0.5 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.5 % Binder/Filler
AB2-12	2'-3' Beige Soil Material	3.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose 5.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	92.0 % Binder/Filler
AB2-13	1'-2' Beige Soil Material	2.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
AB2-13	2'-3' Blue Soil Material	5.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	95.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-14	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler
B2-14	1'-2' Brown Soil Material	0.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-14	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
AB2-15	1'-2' Light Grey	5.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	95.0 % Binder/Filler
B2-16	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-16	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. *Point Counting is recommended for friable materials containing trace to 10% asbestos.*
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-16	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
AB2-17	2'-3' Light Gray Soil Material	1.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose 2.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler
AB2-18	2'-3' Off-White Soil Material	1.0 % Chrysotile ND % Amosite 1.0 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-19	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-19	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-19	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected. TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (rockwool wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
AB2-21	2'-3' Brown Friable Fibrous Material	<<1 % Chrysotile <<1 % Amosite <<1 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose 40.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	59+ % Binder/Filler
AB2-22	1'-2' Light Blue Soil Material	1.0 % Chrysotile ND % Amosite 1.0 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
AB2-22	2'-3' Light Grey Material	ND % Chrysotile 1.0 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
AB2-23	1'-2' Off-White Non-Friable Fibrous Material	10-15 % Chrysotile ND % Amosite 1-2 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	83.0 % Binder/Filler
AB2-25	1'-2' Light Grey Soil Material	0.5 % Chrysotile 1.0 % Amosite 1.0 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.5 % Binder/Filler
AB2-25	2'-3' Brown Soil Material	20.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	80.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
AB2-26	2'-3' Beige Soil Material	10.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	90.0 % Binder/Filler
B2-27	0'-1' Brown Soil Material	0.1 % Chrysotile 0.4 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-27	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
AB2-27	2'-3' Beige Soil Material	0.1 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.9 % Binder/Filler
B2-27	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
AB2-29	2'-3' Beige Soil Material	0.5 % Chrysotile 0.1 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.4 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-30	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-30	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler
B2-30	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-31	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-31	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-31	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stinger
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-33	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-33	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-33	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-34	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-34	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-34	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-35	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-35	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-35	2'-3' Brown Soil Material	1.0 % Chrysotile 0.5 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.5 % Binder/Filler
B2-36	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-36	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-36	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	95.5 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-37	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-37	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-37	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-38	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-38	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-38	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/18/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	*Waukegan, Illinois*

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-40	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-40	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-40	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-41	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-41	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-41	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-42	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-42	1'-2' Brown Soil Material	0.1 % Chrysotile 0.1 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.8 % Binder/Filler
B2-42	2'-3' Brown Soil Material	1.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-43	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-43	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
AB2-45	2'-3' Beige Soil Material	ND % Chrysotile 2.0 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected. TD - Trace Detected
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	98D800FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bechus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-45	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-46	1'-2' Brown Soil Material	0.6 % Chrysotile ND % Amosite 0.1 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.3 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-46	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-47	0'-1' Brown Soil Material	0.1 % Chrysotile 0.1 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.8 % Binder/Filler
B2-47	1'-2' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
AB2-47	1'-2' Grey Non-Friable Fibrous Material	1-5 % Chrysotile ND % Amosite 1-5 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	90.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-47	2'-3' Rado Brown Soil Material	ND % Chrysotile 0.2 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.8 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-49	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-49	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-49	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-50	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-50	1'-2' Brown Soil Material	0.1 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.9 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-50	2'-3' Brown Soil Material	0.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler
AB2-51	1'-2' Off-White Soil Material	5.0 % Chrysotile ND % Amosite 0.1 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	94.9 % Binder/Filler
B2-52	0'-1' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-52	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-52	1'-2' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-52	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-52	2'-3' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-52	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
AB2-53	0'-1' Beige Soil Material	1.0 % Chrysotile ND % Amosite 0.1 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.9 % Binder/Filler
B3-54	0'-1' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-54	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
AB2-54	0'-1' Redo Redo Tan Non-Friable Fibrous Material	15-25 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	75.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected. TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-54	1'-2' Redo Brown Soil Material	0.2 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.8 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
AB2-54	1'-2' Redo Redo Beige Non-Friable Fibrous Material	15-25 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	75.0 % Binder/Filler
B2-54	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-54	2'-3' Redo Brown Soil Material	0.5 % Chrysotile 0.1 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.4 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-56	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-56	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Steinger
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-59	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-59	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-61	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-61	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-61	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-62	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-62	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-62	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-63	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-63	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-63	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-64	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Steinger
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-64	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-64	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-69	0'-1' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-69	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-69	1'-2' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-69	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-69	2'-3' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-70	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-70	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-70	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-71	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-71	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stinger
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-71	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-72	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-72	1'-2' Brown Soil Material	0.2 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.8 % Binder/Filler
B2-72	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-75	0'-1' Brown Soil Material	0.1 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.9 % Binder/Filler
B2-75	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-75	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-76	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-76	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-77	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-77	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-77	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-78	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-78	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-78	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-79	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-79	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B2-79	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected. TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B2-80	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-80	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-80	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-81	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B2-81	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B2-81	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-asbestos samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-01	0'-1' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-01	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-01	1'-2' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-01	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-01	2'-3' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-02	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	3.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-02	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-02	2'-3' Brown Soil Material	0.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.5 % Binder/Filler
B3-03	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-03	1'-2' Brown Soil Material	1.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-03	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-04	0'-1' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	3.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-04	1'-2' Rado Brown Soil Material	0.2 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.8 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-04	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	5.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	95.0 % Binder/Filler
B3-04	2'-3' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose 3.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	96.0 % Binder/Filler
B3-04	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-05	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	3.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler
B3-05	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	5.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	95.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-05	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	15.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	85.0 % Binder/Filler
B3-06	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-06	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose 0.5 % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-06	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-07	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-07	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Swinger
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-07	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-08	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	5.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	95.0 % Binder/Filler
B3-08	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	10.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	90.0 % Binder/Filler
B3-08	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-09	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-09	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-09	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler
B3-10	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-10	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	3.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler
B3-10	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-11	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose 1.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler
B3-11	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	3.0 % Cellulose 1.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	96.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Steiger
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-11	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-12	0'-1' Redo Brown Soil Material	0.5 % Chrysotile 0.1 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.4 % Binder/Filler
B3-12	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-12	1'-2' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-12	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-12	2'-3' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-13	0'-1' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-13	1'-2' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-13	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-13	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-14	0'-1' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-14	0'-1' Brown Soil Material	ND % Chrysotile 1.0 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/18/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-14	1'-2' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-14	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-14	2'-3' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-15	0'-1' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-15	1'-2' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-15	0'-1' Brown Soil Material	1.0 % Chrysotile ND % Amosite 0.2 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.8 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-15	2'-3' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-15	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
AB3-16	0'-1' Off-White Soil Material	2.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
AB3-16	1'-2' Tan Soil Material	1.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
AB3-16	2'-3' White Soil Material	0.3 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.7 % Binder/Filler
B3-17	0'-1' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-17	1'-2' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-17	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-17	2'-3' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-17	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose 1.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-18	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-18	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected. TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-18	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-19	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	3.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler
B3-19	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-19	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-20	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-20	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-20	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-21	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-21	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-21	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	3.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler
AB3-22	0'-1' Gray Soil Material	1.0 % Chrysotile ND % Amosite 0.5 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.5 % Binder/Filler
B3-23	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993).
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-23	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-23	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	3.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler
B3-24	1'-2' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-24	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-24	2'-3' Redo Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-24	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber 0.5 % Other Fiber	99.5 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-25	0'-1' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-25	1'-2' Rado Brown Soil Material	0.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
AB3-25	1'-2' Light Grey Soil Material	1.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-25	2'-3' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-26	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-26	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-26	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-27	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-27	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-27	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-28	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-28	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-28	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-29	0'-1' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-29	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-29	1'-2' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-29	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-30	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-actual samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected. TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-30	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-30	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-31	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-31	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-31	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler
B3-32	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stinger
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-32	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-32	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-33	0'-1' Rado Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-33	1'-2' Rado Brown Soil Material	ND % Chrysotile 0.1 % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.9 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-33	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-33	2'-3' Rado Brown Soil Material	0.9 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.1 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-33	1'-2' Brown Soil Material	0.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.5 % Binder/Filler
B3-34	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophylliite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-34	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-34	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler
B3-35	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-35	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-35	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-36	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-36	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-36	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-37	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-37	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of trace detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected, TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-37	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
AB3-38	0'-1' Beige Soil Material	ND % Chrysotile 2.0 % Amosite 1.0 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler
AB3-38	1'-2' Grey Soil Material	10.0 % Chrysotile ND % Amosite 10.0 % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	80.0 % Binder/Filler
B3-39	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-39	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite ND % Actinolite	1.0 % Cellulose 1.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-39	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-40	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-40	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	0.5 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.5 % Binder/Filler
B3-40	2'-3' Brown Soil Material	0.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.5 % Binder/Filler
B3-42	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-42	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-42	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected. TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-43	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	3.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	97.0 % Binder/Filler
B3-43	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-43	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-44	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	5.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	95.0 % Binder/Filler
B3-44	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose 1.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	99.0 % Binder/Filler
B3-44	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Spinger
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
AB3-45	2'-3' Light Gray Soil Material	2.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	3.0 % Cellulose 5.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	90.0 % Binder/Filler
AB3-46	2'-3' Beige Soil Material	1.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.5 % Binder/Filler
B3-47	0'-1' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	2.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.0 % Binder/Filler
B3-47	1'-2' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-47	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-48	0'-1' Brown Soil Material	0.5 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	1.0 % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	98.5 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

RCM Laboratories, Inc.
5400 East Avenue
Countryside, IL 60525

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

REPORT DATE:	12/16/98
DATE RECEIVED:	12/9/98
RCM PROJECT NUMBER:	980900FINAL
CLIENT JOB NUMBER:	N/A
SAMPLED BY:	Ronald Bachus
PROJECT LOCATION:	Waukegan, Illinois

BULK ANALYSIS REPORT
POLARIZED LIGHT MICROSCOPY

LAB #	SAMPLE DESCRIPTION	ASBESTOS CONTENT (calibrated visual estimate)	NON-ASBESTOS FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS
B3-48	1'-2' *Brown Soil Material*	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
B3-48	2'-3' Brown Soil Material	ND % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	100.0 % Binder/Filler
AB3-50	1'-2' Grey Soil Material	5.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose ND % MMMF* ND % Synthetic Fiber ND % Other Fiber	95.0 % Binder/Filler
AB3-50	2'-3' Redo Beige Soil Material	2.0 % Chrysotile ND % Amosite ND % Crocidolite ND % Tremolite ND % Anthophyllite ND % Actinolite	ND % Cellulose 2.0 % MMMF* ND % Synthetic Fiber ND % Other Fiber	96.0 % Binder/Filler

GENERAL COMMENTS:
(A) Samples analyzed by Polarized Light Microscopy using EPA recommended method (EPA/600/R-93-116, July 1993)
(B) Analytical results are only representative of the materials tested.
(C) Non-school samples will be disposed of after three months unless client makes special arrangements with RCM.
(D) Further analytical testing by TEM is recommended for floor tile samples and roofing material samples with asbestos results of none detected, trace detected or <1%. Point Counting is recommended for friable materials containing trace to 10% asbestos.
(E) ND - None Detected; TD - Trace Detected.
*MMMF - Man Made Mineral Fiber (mineral wool, fiberglass, ceramic fiber, etc.)

Tianbao Bai
Tianbao Bai, Ph.D., Laboratory Director/Analyst

Marie E. Leddy
Marie E. Leddy, Laboratory Manager

Lois E. Yoksoulian
Lois E. Yoksoulian, Laboratory Analyst

ATTACHMENT 4
LICENSES/TRAINING CERTIFICATES

State of Illinois
Department of Public Health

A 67347

LICENSE, PERMIT, CERTIFICATION, REGISTRATION

The person, firm or corporation whose name appears on this certificate has complied with the provisions of the Illinois Statutes and/or rules and regulations and is hereby authorized to engage in the activity as indicated below.

JOHN R. LUMPKIN, M.D.
DIRECTOR

Issued under the authority of
The State of Illinois
Department of Public Health

EXPIRATION DATE	CATEGORY	I.D NUMBER
05/15/98	5319	100-7374

RONALD BACHUS

PROJECT MANAGER
~~INSPECTOR AIR SAMPLING PROFESSIONAL~~

BUSINESS ADDRESS

RONALD BACHUS
1852 SYCAMORE ROAD
HOMEWOOD IL 60430

THIS LICENSE IS NOT VALID IF YOUR IDPH
REFRESHER COURSE CERTIFICATE IS NOT CURRENT

Printed by Authority of the State of Illinois ● 2/91 ●

State of Illinois A 67347
Department of Public Health
LICENSE, PERMIT, CERTIFICATION, REGISTRATION

ASBESTOS PROFESSIONAL LICENSE

EXPIRATION DATE	CATEGORY	I.D NUMBER
05/15/98	5319	100-7374

RONALD BACHUS

PROJECT MANAGER
INSPECTOR AIR SAMPLING PROFESSIONAL

THE PERSON, FIRM OR CORPORATION WHOSE NAME APPEARS ON THIS CERTIFICATE HAS COMPLIED WITH THE PROVISIONS OF THE ILLINOIS STATUTES AND/OR RULES AND REGULATIONS AND IS HEREBY AUTHORIZED TO ENGAGE IN THE ACTIVITY INDICATED ON THE FACE OF THIS CARD.

ISSUED UNDER THE AUTHORITY OF
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC HEALTH

Moraine Valley Community College
Environmental Institute
AHERA Accreditation

This certificate is awarded to

RONALD J. BACHUS

In recognition of attending the required four-hour refresher course and successfully passing the written examination, attaining a score of 70 percent or greater, for accreditation as a:

Building Inspector

Course Date	*Test Date*	*Expiration Date*	*Social Security #*	*Accreditation #*
July 29, 1998	**July 29, 1998**	**July 28, 1999**	**318-72-6853**	**798IR001**

This course is fully approved by the U.S. EPA only for purposes of accreditation under Title II of the Toxic Substances Control Act 40 CFR part 763. This course is further approved by the Illinois Department of Public Health and the Indiana Department of Environmental Management.

Moraine Valley Community College
10900 South 88th Avenue
Palos Hills, IL 60465-0937
708-975-5415

Mary Ann Cook
Instructional Coordinator

National Institute of Standards and Technology

NVLAP®

National Voluntary Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Scope of Accreditation

BULK ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101853-0

RCM LABORATORIES, INC.
5400 East Avenue, Second Floor
Countryside, IL 60525
Dr. Tianbao Bai
Phone: 708-485-8600 Fax: 708-485-8607

NVLAP Code	*Designation*
18/A01	U.S. EPA's "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" as found in 40 CFR, Part 763, Subpart F, App. A, or the current U.S. EPA method for the analysis of asbestos in building material.

June 30, 1999

Effective through

For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Certificate of Accreditation

DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA

RCM LABORATORIES, INC.
COUNTRYSIDE, IL

is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. Accreditation is awarded for specific services, listed on the Scope of Accreditation for:

BULK ASBESTOS FIBER ANALYSIS

June 30, 1999

Effective through

For the National Institute of Standards and Technology

NVLAP Lab Code: 101853-0

DRAFT

Appendix F

Surface Characterization Data Sheets - Site 2 and Site 3

DRAFT

Surface Characterization Data Sheet - Site 2

Former Johns Manville Manufacturing Facility - Waukegan, Illinois

ELM Consulting Project Number - 98000701

DATE	PERSONNEL	ID NUMBER	"SITE" AT WHICH ACM WAS FOUND (SITE 2 OR SITE 3)	FRAGMENT	CLUSTER	*SIZE OF ACM FRAGMENT/ CLUSTER	TYPE OF ACM FRAGMENT/CLUSTER (transite, insulation, roofing materials, etc.)	GENERAL LOCATION OF ACM FRAGMENT/CLUSTER
12/2/98	JJS/RJB	2-1	2		X	2"X1"	Transite Pipe	Far north end of the concrete pad of the former shooting range building.
12/2/98	JJS/RJB	2-2	2		X	1"X1"	Transite Pipe	Far south end of concrete pad of former shooting range building adjacent to ComEd's east-west fence line.
12/2/98	JJS/RJB	2-3	2		X	1"X1"	Transite Pipe	Middle of the concrete pad of the former shooting range building on the SE side.
12/2/98	JJS/RJB	2-4	2		X	1"X1"	Transite Pipe	Middle of the concrete pad of the former shooting range building on the southeast side.
12/2/98	JJS/RJB	2-5	2		X	2"X2"	Flashing Material/Roofing Material	Approximately 40 feet NW of the big tree on the north end of Site 2.
12/2/98	JJS/RJB	2-6	2		X	2"X1"	Transite Pipe	Approximately 50 feet east of the concrete pad of the former shooting range building towards the south side of Site 2.
12/2/98	JJS/RJB	2-7	2		X	2"X2"	Transite Pipe	Approximately 25 feet east of the concrete pad of the former shooting range building towards the north side of Site 2.
12/2/98	JJS/RJB	2-8	2		X	1"X1"	Transite Pipe	Approximately 50 feet east of the concrete pad of the former shooting range building in the middle of Site 2.
12/2/98	JJS/RJB	2-9	2	X		1"X1"	Transite Pipe	Approximately 30 feet south of JM's east-west fence line on the gravel road that leads to the fishing pier; approximately 35 feet NE of the concrete pad of the former shooting range building.
12/2/98	JJS/RJB	2-10	2		X	1"X1"	Transite Pipe	Approximately 30 feet south of JM's east-west fence line on the gravel road that leads to the fishing pier; somewhat even with the big tree but 20 feet west.
12/2/98	JJS/RJB	2-11	2	X		2"X2"	Tar Paper	Approximately 1 foot south of JM's east-west fence line; somewhat even with the big tree but 10 feet west.
12/2/98	JJS/RJB	2-12	2		X	1"X1"	Roofing Material	Approximately 3 feet south of JM's east-west fence line on the northern end of the parcel.
12/2/98	JJS/RJB	2-13	2		X	2"X1'	Roofing Material	Approximately 5 feet west of JM's north-south fence line on the northern end of the parcel.
12/2/98	JJS/RJB	2-14	2	X		1"X1"	Tar Paper	Approximately 4 feet south of JM's east-west fence line directly across from the fishing pier parking entrance.
12/2/98	JJS/RJB	2-15	2	X		1"X1"	Roofing Material	Approximately 10 feet east of ComEd's north-south fence line; approximately 15 feet south of JM's east-west fence line on NW end of the parcel.
12/3/98	JJS/TF/RP	2-16	2		X	4"X4"	Roofing Material	West end of parcel; approximately 15 feet east of ComEd's north-south fence line.

* = If a cluster of ACM fragments was located, the "size of the ACM fragment/cluster" represents the size of the largest piece found in the cluster.

DRAFT

Surface Characterization Data Sheet - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	ID NUMBER	"SITE" AT WHICH ACM WAS FOUND (SITE 2 OR SITE 3)	FRAGMENT	CLUSTER	*SIZE OF ACM FRAGMENT/ CLUSTER	TYPE OF ACM FRAGMENT/CLUSTER (transite, insulation, roofing materials, etc.)	GENERAL LOCATION OF ACM FRAGMENT/CLUSTER
12/3/98	JJS/TF/RP	2-17	2		X	1"X1"	Transite Pipe	West end of parcel; approximately 40 feet east of ComEd's north-south fence line.
12/3/98	JJS/TF/RP	2-18	2		X	3"X2"	Transite Pipe	SW end of parcel; approximately 10 feet north of ComEd's east-west fence line.
12/3/98	JJS/TF/RP	2-19	2		X	6"X6"	Roofing Material	SW end of parcel; approximately 15 feet north of ComEd's east-west fence line.
12/3/98	JJS/TF/RP	2-20	2	X		2"X1"	Tar Paper	Inside the former race track loop on the NW corner.
12/3/98	JJS/TF/RP	2-21	2		X	1"X1"	Tar Paper	Approximately 20 feet east of the concrete pad of the former shooting range building; approximately 2 feet north of ComEd's east-west fence line.
12/3/98	JJS/TF/RP	2-22	2		X	2"X2"	Tar Paper	Middle of Site 2; east of the concrete pad of the former shooting range building; north end of Site 2.
12/3/98	JJS/TF/RP	2-23	2		X	1"X1"	Transite Pipe	Middle of Site 2; approximately 15 feet north of ComEd's east-west fence line.
12/3/98	JJS/TF/RP	2-24	2		X	3"X3"	Transite Pipe	Middle of Site 2 between concrete pad of former shooting range building and big tree.
12/3/98	JJS/TF/RP	2-25	2		X	1"X1"	Tar Paper	Middle of Site 2; approximately 50 feet north of the big tree; approximately 20 feet south of the fishing pier dirt road.
12/3/98	JJS/TF/RP	2-26	2	X		3"X3"	Transite Pipe	Middle of Site 2; approximately 90 feet NE of the big tree; approximately 40 feet south of the fishing pier dirt road.
12/3/98	JJS/TF/RP	2-27	2		X	8"X3"	Roofing Material	Middle of Site 2 between the big tree and the fishing pier parking area.
12/3/98	JJS/TF/RP	2-28	2		X	4"X3"	Roofing Material	Middle of Site 2 between the big tree and the fishing pier parking area.
12/3/98	JJS/TF/RP	2-29	2		X	unknown-majority is buried	Roofing Material	Middle of Site 2; approximately 30 feet SW of purple loosestrife patch; approximately 30 feet north of ComEd's east-west fence line.
12/3/98	JJS/TF/RP	2-30	2		X	10"X4"	Roofing Material	Middle of Site 2; approximately 25 feet SE of Phragmites patch.
12/3/98	JJS/TF/RP	2-31	2		X	12"X6"	Tar Paper	Middle of Site 2; approximately 30 feet NW of purple loosestrife patch.
12/3/98	JJS/TF/RP	2-32	2		X	3"X3"	Transite Pipe; Tar Paper	Middle of Site 2; approximately 25 feet west of purple loosestrife patch.
12/3/98	JJS/TF/RP	2-33	2		X	8"X8"	Transite Pipe; Tar Paper	Middle of Site 2; approximately 10 feet NW of purple loosestrife patch.
12/3/98	JJS/TF/RP	2-34	2		X	8"X8"	Tar Paper	Middle of Site 2; approximately 10 feet NW of purple loosestrife patch.

* = If a cluster of ACM fragments was located, the "size of the ACM fragment/cluster" represents the size of the largest piece found in the cluster.

DRAFT

Surface Characterization Data Sheet - Site 2

Former Johns Manville Manufacturing Facility - Waukegan, Illinois

ELM Consulting Project Number - 98000701

DATE	PERSONNEL	ID NUMBER	"SITE" AT WHICH ACM WAS FOUND (SITE 2 OR SITE 3)	FRAGMENT	CLUSTER	*SIZE OF ACM FRAGMENT/ CLUSTER	TYPE OF ACM FRAGMENT/CLUSTER (transite, insulation, roofing materials, etc.)	GENERAL LOCATION OF ACM FRAGMENT/CLUSTER
12/3/98	JJS/TF/RP	2-35	2		X	18"X10"	Roofing Material	Middle of Site 2; approximately 5 feet NW of purple loosestrife patch.
12/3/98	JJS/TF/RP	2-36	2		X	2'X3"	Tar Paper; Transite Pipe	Middle of Site 2; approximately 40 feet north of purple loosestrife patch.
12/3/98	JJS/TF/RP	2-37	2	X		unknown-majority is buried	Roofing Material	Within the purple loosestrife patch on the NW side.
12/3/98	JJS/TF/RP	2-38	2		X	2'X4"	Roofing Material	Middle of Site 2; approximately 10 feet west of fishing pier parking area; approximately 30 feet NE of purple loosestrife patch.
12/3/98	JJS/TF/RP	2-39	2		X	4"X2"	Roofing Material	Middle of Site 2; approximately 10 feet south of purple loosestrife patch; approximately 40 feet north of ComEd's east-west fence line.
12/4/98	JJS/TF/RP	2-40	2	X		2" in diameter	Tubing	Middle of Site 2; approximately 20 feet south and 10 east of fishing pier dirt road.
12/4/98	JJS/TF/RP	2-41	2	X		3"X3"	Tar Paper	Middle of Site 2; approximately 100 feet north of ComEd's east-west fence line.
12/4/98	JJS/TF/RP	2-42	2	X		6"X6"	Insulation	Middle of Site 2; approximately 10 feet south of fishing pier dirt road.
12/4/98	JJS/TF/RP	2-43	2	X		12"X12"	Tar Paper	Middle of Site 2; approximately 10 feet south of fishing pier dirt road.
12/4/98	JJS/TF/RP	2-44	2	X		unknown-majority is buried	Roofing Material	East side of Site 2; approximately 50 feet east of JM's north-south fence line; approximately 10 feet south of JM's east-west fence line.
12/4/98	JJS/TF/RP	2-45	2		X	12"X10"	Transite Pipe; Roofing Material	East side of Site 2; approximately 50 feet south of JM's east-west fence line; approximately 100 feet west of the beach.
12/4/98	JJS/TF/RP	2-46	2		X	8"X4"	Transite Pipe	East side of Site 2; approximately 35 feet south of JM's east-west fence line.
12/4/98	JJS/TF/RP	2-47	2		X	3"X3"	Transite Pipe	East side of Site 2; approximately 50 feet south of JM's east-west fence line.
12/4/98	JJS/TF/RP	2-48	2		X	1"X1"	Tar Paper	East side of Site 2; approximately 35 feet south of JM's east-west fence line.
12/4/98	JJS/TF/RP	2-49	2		X	2"X2"	Transite Pipe; Tar Paper	East side of Site 2; approximately 40 feet south of JM's east-west fence line.
12/4/98	JJS/TF/RP	2-50	2		X	2"X2"	Transite Pipe; Roofing Material	East side of Site 2; approximately 100 feet south of JM's east-west fence line.
12/4/98	JJS/TF/RP	2-51	2		X	8"X3"	Transite Pipe; Roofing Material	East side of Site 2; approximately 100 feet south of JM's east-west fence line.

*** = If a cluster of ACM fragments was located, the "size of the ACM fragment/cluster" represents the size of the largest piece found in the cluster.**

DRAFT

Surface Characterization Data Sheet - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	ID NUMBER	"SITE" AT WHICH ACM WAS FOUND (SITE 2 OR SITE 3)	FRAGMENT	CLUSTER	*SIZE OF ACM FRAGMENT/ CLUSTER	TYPE OF ACM FRAGMENT/CLUSTER (transite, insulation, roofing materials, etc.)	GENERAL LOCATION OF ACM FRAGMENT/CLUSTER
12/4/98	JJS/TF/RP	2-52	2		X	4"X4"	Roofing Material	East side of Site 2; approximately 50 feet east of JM's north-south fence line.
12/4/98	JJS/TF/RP	2-53	2	X		1"X1"	Transite Pipe	East side of Site 2; approximately 50 feet east of JM's north-south fence line.
12/4/98	JJS/TF/RP	2-54	2		X	1"X1"	Transite Pipe	East side of Site 2 between JM's north-south fence line and the beach.
12/4/98	JJS/TF/RP	2-55	2		X	3"X2"	Transite Pipe	East side of Site 2; approximately 20 feet east of JM's north-south fence line.
12/4/98	JJS/TF/RP	2-56	2		X	2"X2"	Roofing Material	East side of Site 2 between JM's north-south fence line and the beach.
12/4/98	JJS/TF/RP	2-57	2	X		2"X2"	Insulation	East side of Site 2 between JM's north-south fence line and the beach.
12/4/98	JJS/TF/RP	2-58	2		X	3"X2"	Roofing Material	East side of Site 2 between JM's north-south fence line and the beach.
12/4/98	JJS/TF/RP	2-59	2	X		1"X1"	Transite Pipe	East side of Site 2; approximately 50 feet east of JM's north-south fence line.
12/4/98	JJS/TF/RP	2-60	2		X	1"X1"	Insulation	East side of Site 2; approximately 30 feet east of JM's north-south fence line.
12/4/98	JJS/TF/RP	2-61	2	X		1"X1"	Insulation	East side of Site 2; approximately 90 feet east of JM's north-south fence line.
12/4/98	JJS/TF/RP	2-62	2		X	6"X5"	Transite Pipe	SE end of Site 2 on the square granite stones, approximately 10 feet east of mulch path.
12/4/98	JJS/TF/RP	2-63	2	X		4"X2"	Transite Pipe	Middle of Site 2; approximately 40 feet west of JM's north-south fence line; along the curve of the far eastern portion of the dirt road of the fishing pier.
12/4/98	JJS/TF/RP	2-64	2		X	3"X2"	Transite Pipe	Middle of Site 2; approximately 20 feet west of JM's north-south fence line; along the curve of the far eastern portion of the dirt road of the fishing pier.
12/4/98	JJS/TF/RP	2-65	2	X		2"X2"	Transite Pipe	East side of Site 2; inside fishing pier area; approximately 10 feet SW of the mulch path.
12/4/98	JJS/TF/RP	2-66	2		X	6"X4"	Transite Pipe	East side of Site 2; inside fishing pier area; within sumac patch; adjacent to ComEd's outfall fence line.
12/4/98	JJS/TF/RP	2-67	2	X		12"X10"	Transite Pipe	East side of Site 2; inside fishing pier area; within sumac patch; adjacent to ComEd's outfall fence line.
12/4/98	JJS/TF/RP	2-68	2		X	12"X10"	Transite Pipe	East side of Site 2; inside fishing pier area; within sumac patch; adjacent to ComEd's outfall fence line.
12/4/98	JJS/TF/RP	2-69	2		X	7"X5"	Transite Pipe	East side of Site 2; inside fishing pier area; adjacent to outfall.
12/4/98	JJS/TF/RP	2-70	2	X		9"X8"	Transite Pipe	East side of Site 2; inside fishing pier area; adjacent and to the SE of the outfall fence line.

* = If a cluster of ACM fragments was located, the "size of the ACM fragment/cluster" represents the size of the largest piece found in the cluster.

DRAFT

Surface Characterization Data Sheet - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	ID NUMBER	"SITE" AT WHICH ACM WAS FOUND (SITE 2 OR SITE 3)	FRAGMENT	CLUSTER	*SIZE OF ACM FRAGMENT/ CLUSTER	TYPE OF ACM FRAGMENT/CLUSTER (transite, insulation, roofing materials, etc.)	GENERAL LOCATION OF ACM FRAGMENT/CLUSTER
12/4/98	JJS/TF/RP	2-71	2		X	3"X3"	Transite Pipe	East side of Site 2; inside fishing pier area.
12/4/98	JJS/TF/RP	2-72	2	X		12"X6"	Transite Pipe	East side of Site 2; inside fishing pier area; adjacent to outfall.
12/4/98	JJS/TF/RP	2-73	2	X		3"X2"	Transite Pipe	East side of Site 2; inside fishing pier area; east of sumac patch.
12/4/98	JJS/TF/RP	2-74	2		X	6"X4"	Transite Pipe	East side of Site 2; inside fishing pier area; east of sumac patch.
12/4/98	JJS/TF/RP	2-75	2		X	6"X4"	Transite Pipe	East side of Site 2; inside fishing pier area; east of sumac patch.
12/4/98	JJS/TF/RP	2-76	2		X	6"X4"	Transite Pipe	East side of Site 2; inside fishing pier area; east of sumac patch.
12/4/98	JJS/TF/RP	2-77	2		X	3"X2"	Transite Pipe; Roofing Material	East side of Site 2; inside fishing pier area; approximately 25 feet north of outfall.
12/4/98	JJS/TF/RP	2-78	2		X	6"X4"	Transite Pipe	East side of Site 2; inside fishing pier area; adjacent to outfall.
12/4/98	JJS/TF/RP	2-79	2		X	6"X4"	Insulation	East side of Site 2; inside fishing pier area; adjacent to outfall.
12/4/98	JJS/TF/RP	2-80	2	X		6"X4"	Transite Pipe	East side of Site 2; inside fishing pier area; adjacent to outfall.
12/4/98	JJS/TF/RP	2-81	2		X	6"X4"	Transite Pipe	East side of Site 2; inside fishing pier area; adjacent to outfall.
12/4/98	JJS/TF/RP	2-82	2		X	5"X7"	Transite Pipe	East side of Site 2; inside fishing pier area; adjacent to outfall.
12/4/98	JJS/TF/RP	2-83	2	X		8"X6"	Transite Pipe; Tar Paper	East side of Site 2; inside fishing pier area; adjacent to outfall.
12/4/98	JJS/TF/RP	2-84	2	X		8"X6"	Transite Pipe	East side of Site 2; inside fishing pier area; adjacent to outfall.

Total number of locations where surface ACM was located: 84

*** = If a cluster of ACM fragments was located, the "size of the ACM fragment/cluster" represents the size of the largest piece found in the cluster.**

DRAFT

Surface Characterization Data Sheet - Site 3
Former Johns Manville Manufacturing Facility -Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	ID NUMBER	"SITE" AT WHICH ACM WAS FOUND (SITE 2 OR SITE 3)	FRAGMENT	CLUSTER	*SIZE OF ACM FRAGMENT/ CLUSTER	TYPE OF ACM FRAGMENT/CLUSTER (transite, insulation, roofing materials, etc.)	GENERAL LOCATION OF ACM FRAGMENT/CLUSTER
12/2/98	JJS/RJB	3-1	3	X		4"X4"	Transite Pipe	Adjacent to Greenwood Avenue; east side of manicured area.
12/2/98	JJS/RJB	3-2	3		X	6"X6"	Concrete	Adjacent to Greenwood Avenue; east side of manicured area.
12/2/98	JJS/RJB	3-3	3		X	6"X6"	Transite Pipe	Adjacent to Greenwood Avenue; east side of manicured area.
12/2/98	JJS/RJB	3-4	3		X	4"X4"	Transite Pipe	Adjacent to Greenwood Avenue; east side of manicured area.
12/2/98	JJS/RJB	3-5	3		X	6"X6"	Transite Pipe	Adjacent to Greenwood Avenue; east side of manicured area.
12/2/98	JJS/RJB	3-6	3		X	6"X6"	Transite Pipe; Felt Paper	Adjacent to Greenwood Avenue; east side of manicured area.
12/2/98	JJS/RJB	3-7	3		X	4"X4"	Transite Pipe	Adjacent to Greenwood Avenue; east side of manicured area.
12/2/98	JJS/RJB	3-8	3		X	Various	Transite Pipe	A 12'X12' square on the far east side of the manicured area.
12/2/98	JJS/RJB	3-9	3		X	12"X10"	Transite Pipe	Adjacent to cattails on the north side; NW end of parcel.
12/2/98	JJS/RJB	3-10	3		X	4"X4"	Transite Pipe	Adjacent to cattails on the north side; NW end of parcel.
12/2/98	JJS/RJB	3-11	3		X	4"X4"	Transite Pipe	Adjacent to cattails on the north side; NW end of parcel.
12/2/98	JJS/RJB	3-12	3	X		5"X5"	Tar Paper	Between cattails and manicured area on the NW end of the parcel.
12/2/98	JJS/RJB	3-13	3		X	8"X3"	Tar Paper	Between cattails and manicured area on the NW end of the parcel.
12/3/98	JJS/TF/RP	3-14	3		X	4"X2"	Transite Pipe	Approximately 20 feet south of cattails on NW portion of parcel.
12/3/98	JJS/TF/RP	3-15	3	X		2"X2"	Tar Paper	Approximately 15 feet south of cattails towards the middle of the parcel.
12/3/98	JJS/TF/RP	3-16	3	X		4"X2"	Transite Pipe	Approximately 20 feet south of cattails towards the middle of the parcel.
12/3/98	JJS/TF/RP	3-17	3		X	3"X3"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-18	3		X	10"X6"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-19	3		X	2"X2"	Transite Pipe	Middle of Site 3 approximately 70 feet west of dirt road.
12/3/98	JJS/TF/RP	3-20	3		X	3"X2"	Transite Pipe	Middle of Site 3 approximately 50 feet west of dirt road.
12/3/98	JJS/TF/RP	3-21	3		X	8"X6"	Transite Pipe	Middle of Site 3 approximately 30 feet west of dirt road.
12/3/98	JJS/TF/RP	3-22	3		X	18"X10"	Transite Pipe; Roofing Material; Tar Paper	Middle of Site 3; 10'X10' area adjacent and to the west of the dirt road.
12/3/98	JJS/TF/RP	3-23	3		X	5"X5"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-24	3		X	10"X8"	Transite Pipe	Middle of Site 3; west side.
12/3/98	JJS/TF/RP	3-25	3					No location was marked "3-25" during the surface characterization.
12/3/98	JJS/TF/RP	3-26	3	X		8"X8"	Transite Pipe	Middle of Site 3; west side.
12/3/98	JJS/TF/RP	3-27	3		X	4"X1'	Transite Pipe	Middle of Site 3; west side.
12/3/98	JJS/TF/RP	3-28	3	X		2"X2"	Transite Pipe	Middle of Site 3; west side.
12/3/98	JJS/TF/RP	3-29	3		X	3"X3"	Transite Pipe	Middle of Site 3; west side.

* = If a cluster of ACM fragments was located, the "size of ACM fragment/cluster" represents the size of the largest piece found in the cluster.

DRAFT

Surface Characterization Data Sheet - Site 3

Former Johns Manville Manufacturing Facility -Waukegan, Illinois

ELM Consulting Project Number - 98000701

DATE	PERSONNEL	ID NUMBER	"SITE" AT WHICH ACM WAS FOUND (SITE 2 OR SITE 3)	FRAGMENT	CLUSTER	*SIZE OF ACM FRAGMENT/ CLUSTER	TYPE OF ACM FRAGMENT/CLUSTER (transite, insulation, roofing materials, etc.)	GENERAL LOCATION OF ACM FRAGMENT/CLUSTER
12/3/98	JJS/TF/RP	3-30	3		X	12"X8"	Transite Pipe	Middle of Site 3; west side.
12/3/98	JJS/TF/RP	3-31	3		X	6"X4"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-32	3	X		4"X3"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-33	3		X	4"X4"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-34	3		X	2"X2"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-35	3		X	1"X1"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-36	3	X		6"X4"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-37	3		X	18"X8"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-38	3		X	6"X4"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-39	3		X	6"X4"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-40	3		X	8"X6"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-41	3		X	18" in diameter X 3' long	Transite Pipe	Middle of Site 3; 10 feet west of dirt road. This is the size of the exposed pipe. The true size is unknown because the pipe continues below grade.
12/3/98	JJS/TF/RP	3-42	3		X	4"X4"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-43	3	X		8"X3"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-44	3		X	6"X4"	Transite Pipe	Middle of Site 3.
12/3/98	JJS/TF/RP	3-45	3		X	4"X2"	Flash Paper; Transite Pipe	SW corner of parcel.
12/3/98	JJS/TF/RP	3-46	3	X		3"X3"	Transite Pipe	SW corner of parcel.
12/3/98	JJS/TF/RP	3-47	3		X	3"X3"	Tar Paper	SW corner of parcel.
12/3/98	JJS/TF/RP	3-48	3		X	5"X3"	Tar Paper	SW corner of parcel; approximately 20 feet north of the southern boundary line.
12/3/98	JJS/TF/RP	3-49	3		X	4"X2"	Transite Pipe	Middle of Site 3; north of the southern boundary line.
12/3/98	JJS/TF/RP	3-50	3		X	3"X2"	Transite Pipe	Middle of Site 3; approximately 20 feet north of southern boundary.
12/3/98	JJS/TF/RP	3-51	3		X	4"X3"	Transite Pipe	Middle of Site 3; approximately 30 feet north of southern boundary.
12/3/98	JJS/TF/RP	3-52	3		X	2"X2"	Transite Pipe	Along the dirt road outside SW boundary line.
12/3/98	JJS/TF/RP	3-53	3		X	3"X3"	Transite Pipe	Along the dirt road outside SW boundary line.
12/3/98	JJS/TF/RP	3-54	3		X	12"X8"	Transite Pipe	Along the dirt road outside SW boundary line.
12/3/98	JJS/TF/RP	3-55	3		X	4"X3"	Transite Pipe	Along the dirt road outside SW boundary line.
12/3/98	JJS/TF/RP	3-56	3		X	4"X3"	Transite Pipe	Along the dirt road outside SW boundary line.
12/3/98	JJS/TF/RP	3-57	3		X	3"X3"	Transite Pipe	Along the dirt road outside SW boundary line.
12/3/98	JJS/TF/RP	3-58	3		X	3"X2"	Transite Pipe	SW corner of parcel.

*** = If a cluster of ACM fragments was located, the "size of ACM fragment/cluster" represents the size of the largest piece found in the cluster.**

DRAFT

Surface Characterization Data Sheet - Site 3
Former Johns Manville Manufacturing Facility -Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	ID NUMBER	"SITE" AT WHICH ACM WAS FOUND (SITE 2 OR SITE 3)	FRAGMENT	CLUSTER	*SIZE OF ACM FRAGMENT/ CLUSTER	TYPE OF ACM FRAGMENT/CLUSTER (transite, insulation, roofing materials, etc.)	GENERAL LOCATION OF ACM FRAGMENT/CLUSTER
12/3/98	JJS/TF/RP	3-59	3		X	4"X4"	Tar Paper	Middle of Site 3; approximately 30 feet north of southern boundary.
12/3/98	JJS/TF/RP	3-60	3	X		4"X2"	Transite Pipe	Middle of the parcel; approximately 30 feet west of the dirt road.
12/4/98	JJS/TF/RP	3-61	3		X	6" in diameter X 4' long	Transite Pipe	East side of Site 3; approximately 20 feet south of the parking area; approximately 20 feet east of the dirt road.
12/4/98	JJS/TF/RP	3-62	3		X	5"X2"	Transite Pipe	East side of Site 3; approximately 5 feet south of the parking area.
12/4/98	JJS/TF/RP	3-63	3		X	6"X6"	Transite Pipe	East side of Site 3; approximately 32 feet south of the parking area.
12/4/98	JJS/TF/RP	3-64	3		X	4"X3"	Transite Pipe; Roofing Material	East side of Site 3; approximately 5 feet south of the parking area.
12/4/98	JJS/TF/RP	3-65	3		X	8"X3"	Transite Pipe	East side of Site 3; approximately 27 feet south of Greenwood Ave; approximately 45 feet west of the train tracks.
12/4/98	JJS/TF/RP	3-66	3		X	6"X2"	Transite Pipe	East side of Site 3; approximately 15 feet south of Greenwood Ave; approximately 40 feet west of the train tracks.
12/4/98	JJS/TF/RP	3-67	3		X	6"X2"	Transite Pipe; Roofing Material	East side of Site 3; approximately 10 feet south of Greenwood Ave.
12/4/98	JJS/TF/RP	3-68	3		X	3"X3"	Insulation	East side of Site 3; approximately 60 feet south of Greenwood Ave; approximately 20 feet west of the train tracks.
12/4/98	JJS/TF/RP	3-69	3		X	2"X2"	Transite Pipe	SE corner of Site 3 along the dirt road; approximately 60 feet south of the electrical transmission tower.
12/4/98	JJS/TF/RP	3-70	3		X	1"X1"	Transite Pipe	SE corner of Site 3 along the dirt road; approximately 20 feet south of the electrical transmission tower.
12/4/98	JJS/TF/RP	3-71	3		X	1"X1"	Transite Pipe	East side of Site 3 along the dirt road; approximately 5 feet SW of the electrical transmission tower.
12/4/98	JJS/TF/RP	3-72	3		X	2'X4'	Tar Paper	East side of Site 3; approximately 50 feet NE of electrical transmission tower; approximately 20 feet west of the train tracks.
12/4/98	JJS/TF/RP	3-73	3		X	4"X2"	Transite Pipe	East side of Site 3; approximately 5 feet NW of electrical transmission tower along the dirt road.
12/4/98	JJS/TF/RP	3-74	3		X	4"X3"	Transite Pipe	East side of Site 3; approximately 40 feet NW of electrical transmission tower along the dirt road.
12/4/98	JJS/TF/RP	3-75	3		X	8"X4"	Insulation; Transite Pipe; Tar Paper	Encompasses all of the surface ACM located within the parking area of Site 3.

Total number of locations where surface ACM was located: 74

A shaded row denotes an ID Number that was not used during the surface characterization at Site 3 (only 3-25).

* = If a cluster of ACM fragments was located, the "size of ACM fragment/cluster" represents the size of the largest piece found in the cluster.

DRAFT

Appendix G

Subsurface Characterization Data Sheets – Site 2 and Site 3

DRAFT

Subsurface Characterization Data Sheet - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	WAS THERE EVIDENCE OF LEAD OBSERVED	DESCRIPTION OF LEAD OBSERVED	WAS MUNICIPAL WASTE OBSERVED	TYPE OF MUNICIPAL WASTE OBSERVED	COOLER	COMMENTS
12/10/98	JJS/RJB	2	B2-1	B2-1 (0-1')	NO	NA	NO	NA	NO	NA	3	2 feet of no recovery.
				B2-1 (1-2')	YES	<1/4"x1/4" raw material; multiple pieces	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-1 REDO	B2-1 (0-1')	NO	NA	NO	NA	NO	NA	3	1 foot of no recovery.
				B2-1 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-1 (2-3')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
12/9/98	JJS/RJB	2	B2-2	B2-2 (0-1')	YES	1/4"X1/4" transite; multiple pieces	NO	NA	NO	NA	3	1 foot of no recovery.
				B2-2 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-2 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-3	B2-3 (0-1')	NO	NA	NO	NA	NO	NA	3	1 foot of no recovery.
				B2-3 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-3 (2-3')	NO	NA	NO	NA	NO	NA		
12/9/98	JJS/RJB	2	B2-4	B2-4 (0-1')	NO	NA	NO	NA	NO	NA	3	2 feet of no recovery.
				B2-4 (1-2')	YES	<1/8"X1/8" raw material; multiple pieces	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-4 REDO	B2-4 (0-1')	NO	NA	NO	NA	NO	NA	3	Full recovery.
				B2-4 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-4 (2-3')	NO	NA	NO	NA	NO	NA		
12/9/98	JJS/RJB	2	B2-5	B2-5 (0-1')	NO	NA	NO	NA	NO	NA	3	No marking on the street.
				B2-5 (1-2')	YES	<1/8"X1/8" raw material; multiple pieces	NO	NA	NO	NA		1 foot of no recovery.
				B2-5 (2-3')	YES	<1/8"X1/8" raw material; multiple pieces	NO	NA	NO	NA		
12/9/98	JJS/RJB	2	B2-6	B2-6 (0-1')	NO	NA	NO	NA	NO	NA	3	Full recovery.
				B2-6 (1-2')	YES	1/8"X1/8" raw material; multiple pieces	NO	NA	NO	NA		
				B2-6 (2-3')	YES	1/8"X1/8" raw material; multiple pieces	NO	NA	NO	NA		

DRAFT

Subsurface Characterization Data Sheet - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	WAS THERE EVIDENCE OF LEAD OBSERVED	DESCRIPTION OF LEAD OBSERVED	WAS MUNICIPAL WASTE OBSERVED	TYPE OF MUNICIPAL WASTE OBSERVED	COOLER	COMMENTS
12/9/98	JJS/RJB	2	B2-7	B2-7 (0-1')	NO	NA	NO	NA	NO	NA	3	Full recovery.
				B2-7 (1-2')	YES	1/8"X1/8" raw material; multiple pieces	NO	NA	NO	NA		
				B2-7 (2-3')	NO	NA	NO	NA	NO	NA		
12/9/98	JJS/RJB	2	B2-8	B2-8 (0-1')	NO	NA	NO	NA	NO	NA	3	Full recovery.
				B2-8 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-8 (2-3')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
12/9/98	JJS/RJB	2	B2-9	B2-9 (0-1')	YES	1/4"X1/4" tile; one piece	NO	NA	NO	NA	3	1 foot of no recovery.
				B2-9 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-9 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-10	B2-10 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-10 (1-2')	YES	<1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
				B2-10 (2-3')	YES	<1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-11	B2-11 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-11 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-11 (2-3')	YES	<1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-12	B2-12 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-12 (1-2')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
				B2-12 (2-3')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-13	B2-13 (0-1')	NO	NA	NO	NA	NO	NA	4	Full recovery.
				B2-13 (1-2')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
				B2-13 (2-3')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		

ɔsurface Charact...ation Data Sheet - ɜ 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	WAS THERE EVIDENCE OF LEAD OBSERVED	DESCRIPTION OF LEAD OBSERVED	WAS MUNICIPAL WASTE OBSERVED	TYPE OF MUNICIPAL WASTE OBSERVED	COOLER	COMMENTS
12/10/98	JJS/RJB	2	B2-14	B2-14 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-14 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-14 (2-3')	NO	NA	NO	NA	NO	NA		
12/9/98	JJS/RJB	2	B2-15	B2-15 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-15 (1-2')	YES	1/4"X1/4" transite; multiple pieces	NO	NA	NO	NA		
				B2-15 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-16	B2-16 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-16 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-16 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-17	B2-17 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-17 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-17 (2-3')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-18	B2-18 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-18 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-18 (2-3')	YES	<1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-19	B2-19 (0-1')	NO	NA	NO	NA	NO	NA	4	Full recovery.
				B2-19 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-19 (2-3')	NO	NA	NO	NA	NO	NA		
	JJS/RJB	2	B2-20	B2-20 (0-1')								This soil sample identification number was not used for the project so no soil sample was retrieved.
				B2-20 (1-2')								
				B2-20 (2-3')								
12/10/98	JJS/RJB	2	B2-21	B2-21 (0-1')	NO	NA	NO	NA	NO	NA	4	Full recovery.
				B2-21 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-21 (2-3')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-22	B2-22 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-22 (1-2')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
				B2-22 (2-3')	YES	1/4"X1/4" roofing material	NO	NA	NO	NA		

Subsurface Characterization Data Sheet - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DRAFT

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	WAS THERE EVIDENCE OF LEAD OBSERVED	DESCRIPTION OF LEAD OBSERVED	WAS MUNICIPAL WASTE OBSERVED	TYPE OF MUNICIPAL WASTE OBSERVED	COOLER	COMMENTS
12/10/98	JJS/RJB	2	B2-23	B2-23 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-23 (1-2')	YES	1/2"X1/2" transite; raw material; multiple pieces	NO	NA	NO	NA		
				B2-23 (2-3')	NO	NA	NO	NA	NO	NA		
		2	B2-24	B2-24 (0-1')								This soil sample identification number was not used for the project so no soil sample was retrieved.
				B2-24 (1-2')								
				B2-24 (2-3')								
12/10/98	JJS/RJB	2	B2-25	B2-25 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-25 (1-2')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
				B2-25 (2-3')	YES	1/4"X1/4" gaskit material; multiple pieces	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-26	B2-26 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-26 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-26 (2-3')	YES	1/4"X1/4" gaskit material; two pieces	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-27	B2-27 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery. Bulk asbestos analysis performed on all three one foot intervals.
				B2-27 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-27 (2-3')	YES	1/4"X1/4" unknown	NO	NA	NO	NA		
		2	B2-28	B2-28 (0-1')								This soil sample identification number was not used for the project so no soil sample was retrieved.
				B2-28 (1-2')								
				B2-28 (2-3')								
12/10/98	JJS/RJB/DJB	2	B2-29	B2-29 (0-1')	NO	NA	NO	NA	NO	NA	4	Full recovery.
				B2-29 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-29 (2-3')	YES	1/4"X1/4" roofing material; multiple pieces	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-30	B2-30 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-30 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-30 (2-3')	NO	NA	NO	NA	NO	NA		

Subsurface Characterization Data Sheet - Page 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	WAS THERE EVIDENCE OF LEAD OBSERVED	DESCRIPTION OF LEAD OBSERVED	WAS MUNICIPAL WASTE OBSERVED	TYPE OF MUNICIPAL WASTE OBSERVED	COOLER	COMMENTS
12/10/98	JJS/RJB	2	B2-31	B2-31 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery
				B2-31 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-31 (2-3')	NO	NA	NO	NA	NO	NA		
		2	B2-32	B2-32 (0-1')								This soil sample identification number was not used for the project so no soil sample was retrieved.
				B2-32 (1-2')								
				B2-32 (2-3')								
12/10/98	JJS/RJB	2	B2-33	B2-33 (0-1')	NO	NA	NO	NA	NO	NA	4	No marking on the street. Full recovery.
				B2-33 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-33 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB/DJB	2	B2-34	B2-34 (0-1')	NA	NA	NA	NA	NA	NA	4	1 foot of no recovery.
				B2-34 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-34 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB/DJB	2	B2-35	B2-35 (0-1')	NO	NA	NO	NA	NO	NA	4	1 foot of no recovery.
				B2-35 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-35 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-36	B2-36 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 5'. 1 foot of no recovery.
				B2-36 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-36 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-37	B2-37 (0-1')	NO	NA	NO	NA	NO	NA	5	Full recovery.
				B2-37 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-37 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-38	B2-38 (0-1')	NO	NA	NO	NA	NO	NA	5	1 foot of no recovery.
				B2-38 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-38 (2-3')	NO	NA	NO	NA	NO	NA		
		2	B2-39	B2-39 (0-1')								No subsurface samples were collected from this sampling location.
				B2-39 (1-2')								
				B2-39 (2-3')								
12/11/98	JJS/RJB/DJB	2	B2-40	B2-40 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 5'. Full recovery.
				B2-40 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-40 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-41	B2-41 (0-1')	NO	NA	NO	NA	NO	NA	5	Full recovery.
				B2-41 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-41 (2-3')	NO	NA	NO	NA	NO	NA		

Subsurface Charact[illegible]ation Data Sheet - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DRAFT

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	WAS THERE EVIDENCE OF LEAD OBSERVED	DESCRIPTION OF LEAD OBSERVED	WAS MUNICIPAL WASTE OBSERVED	TYPE OF MUNICIPAL WASTE OBSERVED	COOLER	COMMENTS
12/10/98	JJS/RJB/DJB	2	B2-42	B2-42 (0-1')	NO	NA	NO	NA	NO	NA	5	1 foot of no recovery.
				B2-42 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-42 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB/DJB	2	B2-43	B2-43 (0-1')	NO	NA	NO	NA	NO	NA	5	A "REDO" sample was not conducted on this sampling location. 2 feet of no recovery.
			NO REDO	B2-43 (1-2')	NO	NA	NO	NA	NO	NA		
		2	B2-44	B2-44 (0-1')								This soil sample identification number was not used for the project so no soil sample was retrieved.
				B2-44 (1-2')								
				B2-44 (2-3')								
12/10/98	JJS/RJB	2	B2-45	B2-45 (0-1')	NO	NA	NO	NA	NO	NA	5	Full recovery.
				B2-45 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-45 (2-3')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
12/10/98	JJS/RJB/DJB	2	B2-46	B2-46 (0-1')	NO	NA	NO	NA	NO	NA	5	1 foot of no recovery.
				B2-46 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-46 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB/DJB	2	B2-47	B2-47 (0-1')	NO	NA	NO	NA	NO	NA	5	There was approximately 1 1/2' of no recovery so the sample location was re-penetrated.
				B2-47 (1-2')	YES	1/2"X1/2" insulation; multiple pieces	NO	NA	NO	NA		
				B2-47 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-47	B2-47 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 5'. 1 foot of no recovery.
			REDO	B2-47 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-47 (2-3')	NO	NA	NO	NA	NO	NA		
		2	B2-48	B2-48 (0-1')								This soil sample identification number was not used for the project so no soil sample was retrieved.
				B2-48 (1-2')								
				B2-48 (2-3')								
12/10/98	JJS/RJB/DJB	2	B2-49	B2-49 (0-1')	NO	NA	NO	NA	NO	NA	5	Full recovery.
				B2-49 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-49 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB/DJB	2	B2-50	B2-50 (0-1')	NO	NA	NO	NA	NO	NA	5	1 foot of no recovery.
				B2-50 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-50 (2-3')	NO	NA	NO	NA	NO	NA		

bsurface Charact. ation Data Sheet - e 2

Former Johns Manville Manufacturing Facility - Waukegan, Illinois

ELM Consulting Project Number - 98000701

DRAFT

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	WAS THERE EVIDENCE OF LEAD OBSERVED	DESCRIPTION OF LEAD OBSERVED	WAS MUNICIPAL WASTE OBSERVED	TYPE OF MUNICIPAL WASTE OBSERVED	COOLER	COMMENTS
12/10/98	JJS/RJB/DJB	2	B2-51	B2-51 (0-1')	NO	NA	NO	NA	NO	NA	5	1 foot of no recovery.
				B2-51 (1-2')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		
				B2-51 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB/DJB	2	B2-52	B2-52 (0-1')	NO	NA	NO	NA	NO	NA	5	There was approximately 1 1/2' of no recovery so the sample location was re-penetrated.
				B2-52 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-52 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-52 REDO	B2-52 (0-1')	NO	NA	NO	NA	NO	NA	5	Full recovery.
				B2-52 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-52 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB	2	B2-53	B2-53 (0-1')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA	5	Full recovery.
				B2-53 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-53 (2-3')	NO	NA	NO	NA	NO	NA		
12/10/98	JJS/RJB/DJB	2	B2-54	B2-54 (0-1')	NO	NA	NO	NA	NO	NA	5	2 feet of no recovery.
				B2-54 (1-2')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-54 REDO	B2-54 (0-1')	NO	NA	NO	NA	NO	NA	5	1 foot of no recovery.
				B2-54 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-54 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-54	B2-54 (0-1')	YES	1/4"X1/4" transite; one piece	NO	NA	NO	NA	5	Composite to 5'.
			REDO	B2-54 (1-2')	YES	1/4"X1/4" raw material; multiple pieces	NO	NA	NO	NA		Full recovery.
			REDO	B2-54 (2-3')	NO	NA	NO	NA	NO	NA		
		2	B2-55	B2-55 (0-1')								No subsurface sample was collected from this sampling location.
				B2-55 (1-2')								
				B2-55 (2-3')								
12/11/98	JJS/RJB/DJB	2	B2-56	B2-56 (0-1')	NO	NA	NO	NA	NO	NA	5	A "REDO" sample was not conducted on this sampling location. 2 feet of no recovery.
			NO REDO	B2-56 (1-2')	NO	NA	NO	NA	NO	NA		
		2	B2-57	B2-57 (0-1')								No subsurface sample was collected from this sampling location.
				B2-57 (1-2')								
				B2-57 (2-3')								

Subsurface Characterization Data Sheet - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DRAFT

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	WAS THERE EVIDENCE OF LEAD OBSERVED	DESCRIPTION OF LEAD OBSERVED	WAS MUNICIPAL WASTE OBSERVED	TYPE OF MUNICIPAL WASTE OBSERVED	COOLER	COMMENTS
		2	B2-58	B2-58 (0-1')								No subsurface sample was collected from this sampling location.
				B2-58 (1-2')								
				B2-58 (2-3')								
12/11/98	JJS/RJB/DJB	2	B2-59	B2-59 (0-1')	NO	NA	NO	NA	NO	NA	5	A "REDO" sample was not conducted on this sampling location. 2 feet of no recovery.
			NO REDO	B2-59 (1-2')	NO	NA	NO	NA	NO	NA		
		2	B2-60	B2-60 (0-1')								No subsurface sample was collected from this sampling location.
				B2-60 (1-2')								
				B2-60 (2-3')								
12/11/98	JJS/RJB/DJB	2	B2-61	B2-61 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 6'. 1 foot of no recovery.
				B2-61 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-61 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-62	B2-62 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 6'. 1 foot of no recovery.
				B2-62 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-62 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-63	B2-63 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 6'. 1 foot of no recovery.
				B2-63 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-63 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-64	B2-64 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 6'. 1 foot of no recovery.
				B2-64 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-64 (2-3')	NO	NA	NO	NA	NO	NA		
		2	B2-65	B2-65 (0-1')								Sampling location was too close to Lake Michigan to provide a safe working environment and therefore no sample was collected.
				B2-65 (1-2')								
				B2-65 (2-3')								
		2	B2-66	B2-66 (0-1')								Sampling location was too close to Lake Michigan to provide a safe working environment and therefore no sample was collected.
				B2-66 (1-2')								
				B2-66 (2-3')								
		2	B2-67	B2-67 (0-1')								Sampling location was too close to Lake Michigan to provide a safe working environment and therefore no sample was collected.
				B2-67 (1-2')								
				B2-67 (2-3')								

DRAFT

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	WAS THERE EVIDENCE OF LEAD OBSERVED	DESCRIPTION OF LEAD OBSERVED	WAS MUNICIPAL WASTE OBSERVED	TYPE OF MUNICIPAL WASTE OBSERVED	COOLER	COMMENTS
		2	B2-68	B2-68 (0-1')								Sampling location was too close to Lake Michigan to provide a safe working environment and therefore no sample was collected.
				B2-68 (1-2')								
				B2-68 (2-3')								
12/10/98	JJS/RJB/DJB	2	B2-69	B2-69 (0-1')	NO	NA	NO	NA	NO	NA	5	2 feet of no recovery.
				B2-69 (1-2')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-69 REDO	B2-69 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 6'. 1 foot of no recovery.
				B2-69 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-69 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-70	B2-70 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 5'. 1 foot of no recovery.
				B2-70 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-70 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-71	B2-71 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 5'. 1 foot of no recovery.
				B2-71 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-71 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-72	B2-72 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 6'. 1 foot of no recovery.
				B2-72 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-72 (2-3')	NO	NA	NO	NA	NO	NA		
		2	B2-73	B2-73 (0-1')								Sampling location was too close to Lake Michigan to provide a safe working environment and therefore no sample was collected.
				B2-73 (1-2')								
				B2-73 (2-3')								
		2	B2-74	B2-74 (0-1')								No subsurface sample was collected from this sampling location.
				B2-74 (1-2')								
				B2-74 (2-3')								
12/11/98	JJS/RJB/DJB	2	B2-75	B2-75 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 5'. Full recovery.
				B2-75 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-75 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-76	B2-76 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 5'. Full recovery. (0-1') should have been submitted for bulk asbestos analysis and was not.
				B2-76 (1-2')	NO	NA	NO	NA	NO	NA		
				B2-76 (2-3')	NO	NA	NO	NA	NO	NA		

DRAFT

Subsurface Characterization Data Sheet - Site 2
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	WAS THERE EVIDENCE OF LEAD OBSERVED	DESCRIPTION OF LEAD OBSERVED	WAS MUNICIPAL WASTE OBSERVED	TYPE OF MUNICIPAL WASTE OBSERVED	COOLER	COMMENTS
12/11/98	JJS/RJB/DJB	2	B2-77	B2-77 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 5'.
				B2-77 (1-2')	NO	NA	NO	NA	NO	NA		Full recovery.
				B2-77 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-78	B2-78 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 6'.
				B2-78 (1-2')	NO	NA	NO	NA	NO	NA		Full recovery.
				B2-78 (2-3')	NO	NA	NO	NA	NO	NA		
12/11/98	JJS/RJB/DJB	2	B2-79	B2-79 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 6'.
				B2-79 (1-2')	NO	NA	NO	NA	NO	NA		Full recovery.
				B2-79 (2-3')	NO	NA	NO	NA	NO	NA		
12/14/98	JJS/RJB/DJB	2	B2-80	B2-80 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 6'.
				B2-80 (1-2')	NO	NA	NO	NA	NO	NA		1 foot of no recovery.
				B2-80 (2-3')	NO	NA	NO	NA	NO	NA		
12/14/98	JJS/RJB/DJB	2	B2-81	B2-81 (0-1')	NO	NA	NO	NA	NO	NA	5	Composite to 6'.
				B2-81 (1-2')	NO	NA	NO	NA	NO	NA		Full recovery.
				B2-81 (2-3')	NO	NA	NO	NA	NO	NA		

DESCRIPTIONS:

NA = Not Applicable.
REDO = Represents a location that was re-penetrated because the first four-foot sampling core yielded two feet of recovery or less.
REDO REDO = Represents a boring location that was re-penetrated two times (only B2-54).
NO REDO = Represents a boring location that should have been re-penetrated because the first four-foot sampling core yielded two feet of recovery or less.
COOLER = The "COOLER" column represents the cooler which a given one-foot soil interval was placed for storage purposes.
Composite to 5' = The GeoProbe sampling apparatus penetrated to five feet with a four-foot samping core to obtain at least a three-foot soil sample.
Composite to 6' = The GeoProbe sampling apparatus penetrated to six feet with a four-foot samping core to obtain at least a three-foot soil sample.
A SHADED ROW represents a proposed boring location that was not penetrated to obtain a soil sample.

DRAFT

Subsurface Characterization Data Sheet - Site 3
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	COOLER	COMMENTS
12/9/98	JJS/RJB	3	B3-1	B3-1 (0-1')	NO	NA	1	2 feet of no recovery.
				B3-1 (1-2')	NO	NA		
12/14/98	JJS/RJB	3	B3-1 REDO	B3-1 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-1 (1-2')	NO	NA		
				B3-1 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-2	B3-2 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-2 (1-2')	NO	NA		
				B3-2 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-3	B3-3 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-3 (1-2')	NO	NA		
				B3-3 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-4	B3-4 (0-1')	NO	NA	1	2 feet of no recovery.
				B3-4 (1-2')	NO	NA		
12/14/98	JJS/RJB	3	B3-4 REDO	B3-4 (0-1')	NO	NA	1	Composite to 6'. Full recovery.
				B3-4 (1-2')	NO	NA		
				B3-4 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-5	B3-5 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-5 (1-2')	NO	NA		
				B3-5 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-6	B3-6 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-6 (1-2')	NO	NA		
				B3-6 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-7	B3-7 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-7 (1-2')	NO	NA		
				B3-7 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-8	B3-8 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-8 (1-2')	NO	NA		
				B3-8 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-9	B3-9 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-9 (1-2')	NO	NA		
				B3-9 (2-3')	NO	NA		

DRAFT

Subsurface Characterization Data Sheet - Site 3
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	COOLER	COMMENTS
12/9/98	JJS/RJB	3	B3-10	B3-10 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-10 (1-2')	NO	NA		
				B3-10 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-11	B3-11 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-11 (1-2')	NO	NA		
				B3-11 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-12	B3-12 (0-1')	NO	NA	1	Boring log is inconsistant with the number of soil intervals inspected. 2 feet on no recovery.
				B3-12 (1-2')	NO	NA		
12/14/98	JJS/RJB/DJB	3	B3-12	B3-12 (0-1')	NO	NA	2	Composite to 6'.
			REDO	B3-12 (1-2')	NO	NA		1 foot of no recovery.
				B3-12 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-13	B3-13 (0-1')	NO	NA	1	No boring log was generated in the field for this sampling location. 2 feet of no recovery.
				B3-13 (1-2')	NO	NA		
12/14/98	JJS/RJB/DJB	3	B3-13	B3-13 (0-1')	NO	NA	2	Composite to 5'. Full recovery.
			REDO	B3-13 (1-2')	NO	NA		A soil sample at interval (2-3') was not submitted for bulk asbestos analysis.
				B3-13 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-14	B3-14 (0-1')	NO	NA	1	2 feet of no recovery.
				B3-14 (1-2')	NO	NA		
12/14/98	JJS/RJB/DJB	3	B3-14	B3-14 (0-1')	NO	NA	1	Composite to 6'.
			REDO	B3-14 (1-2')	NO	NA		1 foot of no recovery.
				B3-14 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-15	B3-15 (0-1')	NO	NA	1	2 feet of no recovery.
				B3-15 (1-2')	NO	NA		
12/14/98	JJS/RJB/DJB	3	B3-15	B3-15 (0-1')	NO	NA	2	Composite to 6'.
			REDO	B3-15 (1-2')	NO	NA		Full recovery.
				B3-15 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-16	B3-16 (0-1')	YES	<1/4"X1/4" insulation; 4 pieces	1	The majority of the (1-2') soil interval
				B3-16 (1-2')	YES	1"X1" raw material; multiple pieces		contained ACM. No baggie for the (1-2')
				B3-16 (2-3')	YES	1"X1" raw material; multiple pieces		soil interval was archived. 1 foot of no recovery.

DRAFT

Subsurface Characterization Data Sheet - Site 3
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	COOLER	COMMENTS
12/9/98	JJS/RJB	3	B3-17	B3-17 (0-1')	NO	NA	1	2 feet of no recovery.
				B3-17 (1-2')	NO	NA		
12/14/98	JJS/RJB/DJB	3	B3-17 REDO	B3-17 (0-1')	NO	NA	2	Composite to 6'. Full recovery.
				B3-17 (1-2')	NO	NA		
				B3-17 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-18	B3-18 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-18 (1-2')	NO	NA		
				B3-18 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-19	B3-19 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-19 (1-2')	NO	NA		
				B3-19 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-20	B3-20 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-20 (1-2')	NO	NA		
				B3-20 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-21	B3-21 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-21 (1-2')	NO	NA		
				B3-21 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-22	B3-22 (0-1')	YES	1/2"X1/2" transite; 8 pieces	1	1 foot of no recovery.
				B3-22 (1-2')	NO	NA		
				B3-22 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-23	B3-23 (0-1')	NO	NA	1	1 foot of no recovery.
				B3-23 (1-2')	NO	NA		
				B3-23 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-24	B3-24 (0-1')	NO	NA	1	2 feet of no recovery.
				B3-24 (1-2')	NO	NA		
12/14/98	JJS/RJB/DJB	3	B3-24 REDO	B3-24 (0-1')	NO	NA	2	Full recovery. (0-1') was not submitted for bulk asbestos analysis.
				B3-24 (1-2')	NO	NA		
				B3-24 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-25	B3-25 (0-1')	NO	NA	2	2 feet of no recovery.
				B3-25 (1-2')	YES	1/2"X1/2" raw material; multiple pieces		

DRAFT

Subsurface Characterization Data Sheet - Site 3
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	COOLER	COMMENTS
12/14/98	JJS/RJB/DJB	3	B3-25	B3-25 (0-1')	NO	NA	2	Composite to 6'.
			REDO	B3-25 (1-2')	NO	NA		1 foot of no recovery.
				B3-25 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-26	B3-26 (0-1')	NO	NA	2	1 foot of no recovery.
				B3-26 (1-2')	NO	NA		
				B3-26 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-27	B3-27 (0-1')	NO	NA	2	1 foot of no recovery.
				B3-27 (1-2')	NO	NA		
				B3-27 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-28	B3-28 (0-1')	NO	NA	2	1 foot of no recovery.
				B3-28 (1-2')	NO	NA		
				B3-28 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-29	B3-29 (0-1')	NO	NA	2	2 feet of no recovery.
				B3-29 (1-2')	NO	NA		
12/14/98	JJS/RJB/DJB	3	B3-29	B3-29 (0-1')	NO	NA	2	Composite to 6'. 1 foot of no recovery.
			REDO	B3-29 (1-2')	NO	NA		A soil sample at interval (2-3') was not
				B3-29 (2-3')	NO	NA		submitted for bulk asbestos analysis.
12/9/98	JJS/RJB	3	B3-30	B3-30 (0-1')	NO	NA	2	1 foot of no recovery.
				B3-30 (1-2')	NO	NA		
				B3-30 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-31	B3-31 (0-1')	NO	NA	2	1 foot of no recovery.
				B3-31 (1-2')	NO	NA		
				B3-31 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-32	B3-32 (0-1')	NO	NA	2	1 foot of no recovery.
				B3-32 (1-2')	NO	NA		
				B3-32 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-33	B3-33 (0-1')	NO	NA	2	2 feet of no recovery.
				B3-33 (1-2')	NO	NA		
12/14/98	JJS/RJB/DJB	3	B3-33	B3-33 (0-1')	NO	NA	2	Composite to 6'.
			REDO	B3-33 (1-2')	NO	NA		Full recovery.
				B3-33 (2-3')	NO	NA		

DRAFT

Subsurface Characterization Data Sheet - Site 3
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	COOLER	COMMENTS
12/9/98	JJS/RJB	3	B3-34	B3-34 (0-1')	NO	NA	2	1 foot of no recovery.
				B3-34 (1-2')	NO	NA		
				B3-34 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-35	B3-35 (0-1')	NO	NA	2	Full recovery.
				B3-35 (1-2')	NO	NA		
				B3-35 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-36	B3-36 (0-1')	NO	NA	2	1 foot of no recovery.
				B3-36 (1-2')	NO	NA		
				B3-36 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-37	B3-37 (0-1')	NO	NA	2	Full recovery.
				B3-37 (1-2')	NO	NA		
				B3-37 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-38	B3-38 (0-1')	YES	1/4"X1/4" transite; 2 pieces	2	1 foot of no recovery.
				B3-38 (1-2')	YES	1/4"X1/4" transite; one piece		
				B3-38 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-39	B3-39 (0-1')	NO	NA	2	1 foot of no recovery.
				B3-39 (1-2')	NO	NA		
				B3-39 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-40	B3-40 (0-1')	NO	NA	3	1 foot of no recovery.
				B3-40 (1-2')	NO	NA		
				B3-40 (2-3')	NO	NA		
[redacted]								
12/9/98	JJS/RJB	3	B3-42	B3-42 (0-1')	NO	NA	3	1 foot of no recovery.
				B3-42 (1-2')	NO	NA		
				B3-42 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-43	B3-43 (0-1')	NO	NA	3	1 foot of no recovery.
				B3-43 (1-2')	NO	NA		
				B3-43 (2-3')	NO	NA		

DRAFT

Subsurface Characterization Data Sheet - Site 3
Former Johns Manville Manufacturing Facility - Waukegan, Illinois
ELM Consulting Project Number - 98000701

DATE	PERSONNEL	SITE 2 OR SITE 3	BORING ID NUMBER	1 FOOT INTERVAL ID NUMBER	WAS ACM OBSERVED	TYPE OF ACM OBSERVED	COOLER	COMMENTS
12/9/98	JJS/RJB	3	B3-44	B3-44 (0-1')	NO	NA	3	Full recovery.
				B3-44 (1-2')	NO	NA		
				B3-44 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-45	B3-45 (0-1')	NO	NA	3	1 foot of no recovery.
				B3-45 (1-2')	NO	NA		
				B3-45 (2-3')	YES	1/2"X1/2" insulation; 2 pieces		
12/9/98	JJS/RJB	3	B3-46	B3-46 (0-1')	NO	NA	3	1 foot of no recovery.
				B3-46 (1-2')	NO	NA		
				B3-46 (2-3')	YES	1/2"X1/2" raw material; multiple pieces		
12/9/98	JJS/RJB	3	B3-47	B3-47 (0-1')	NO	NA	3	1 foot of no recovery.
				B3-47 (1-2')	NO	NA		
				B3-47 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-48	B3-48 (0-1')	NO	NA	3	1 foot of no recovery.
				B3-48 (1-2')	NO	NA		
				B3-48 (2-3')	NO	NA		
12/9/98	JJS/RJB	3	B3-50	B3-50 (0-1')	NO	NA	3	2 feet of no recovery.
				B3-50 (1-2')	YES	1/2"X1/2" raw material; multiple pieces		
12/14/98	JJS/RJB/DJB	3	B3-50 REDO	B3-50 (0-1')	NO	NA	3	Composite to 6'. 1 foot of no recovery.
				B3-50 (1-2')	NO	NA		
				B3-50 (2-3')	YES	1/2"X1/2" raw material; 2 pieces		

DESCRIPTIONS:

NA = Not Applicable

REDO = Represents a location that was re-penetrated because the first four-foot sampling core yielded two feet of recovery or less.

COOLER = The "COOLER" column represents the cooler which a given one-foot soil interval was placed for storage purposes.

Composite to 5' = The GeoProbe sampling apparatus penetrated to five feet with a four-foot samping core to obtain at least a three-foot soil sample.

Composite to 6' = The GeoProbe sampling apparatus penetrated to six feet with a four-foot samping core to obtain at least a three-foot soil sample.

A SHADED ROW represents a proposed boring location that was not penetrated to obtain a soil sample.

DRAFT

Appendix H

Boring Logs

E L M C o n s u l t i n g

BORING NUMBER B2-1

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Dirty tan, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B2-1 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, dry, silty sand, with roots	0		
2			Tan, dry, silty sand	0		
3			Black, dry, silty sand			
			Black, dry, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-2

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3
LOCATION: Waukegan, IL
TOTAL DEPTH: 4 feet
TOC ELEV.: N/A
DRILLING COMPANY: Terra Trace
DRILLER: Mike
LOCATION: Refer to Site Map

PROJECT NO. **98000701**
BOREHOLE DIA. 2 inches
DEPTH TO WATER not encountered
DRILLING METHOD: GP
DATE DRILLED: 12/9/98
GEOLOGIST: Jeff Stringer
COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan to black, moist, silty sand, with trace pebbles	0		
2			Dirty tan, moist, silty clay	0		
			Black, moist, silty clay, with trace pebbles			
3			Black, moist, silty clay, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe
SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B2-3

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Gray, moist, silty sand, with trace pebbles	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Tan to black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; SS = Split Spoon; ST = Shelby Tube; AS = AugerSample; GP = Geo-Probe; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-4

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black to tan, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-4 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
			Black, dry, silty sand			
			Gray, dry, silty clay			
1			Black to tan, moist, silty sand	0		
2			Black, moist, silty sand	0		
3			Light gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-5

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			*No Recovery*	0		GP
1			Black, moist, silty sand, with trace pebbles	0		
2			Dirty tan, moist, poorly sorted, sand, with trace pebbles	0		
3			Black to dirty tan, moist, poorly sorted, sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-6

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
			Brown, moist, silty sand			
1			Dirty gray, moist, silty clay	0		
2			Dirty tan, moist, silty sand	0		
3			Dirty tan, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-7

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Dirty gray, moist, silty clay	0		GP
1			Dirty gray, moist, silty clay	0		
2			Dark tan, moist, silty clay	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-8

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER *not encountered*
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description *Soil Classification*	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
			White, gravel, with tan, dry silty sand			
1			Dirty tan, dry, silty clay	0		
2			Dirty tan, dry, silty clay	0		
3			Dirty tan, dry, silty clay	0		
			Black, moist, silty sand			
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; SS = Split Spoon; ST = Shelby Tube; AS = AugerSample; GP = Geo-Probe; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-9

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, dry, silty sand, with trace pebbles	0		
2			Dirty gray, dry, silty clay, with trace pebbles Tan, moist, silty sand, with trace pebbles	0		
3			Tan to black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-10

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, dry, silty clay, with trace pebbles	0		
2			Dirty gray, moist, silty sand, with trace pebbles	0		
3			Dirty gray, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-11

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty sand, with trace pebbles	0		
2			Dirty tan, moist, silty sand, with trace pebbles	0		
3			Dirty tan, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B2-12

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
	BOREHOLE DIA. 2 inches
LOCATION: Waukegan, IL	DEPTH TO WATER not encountered
TOTAL DEPTH: 4 feet	DRILLING METHOD: GP
TOC ELEV.: N/A	DATE DRILLED: 12/10/98
DRILLING COMPANY: Terra Trace	GEOLOGIST: Jeff Stringer
DRILLER: Mike	
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty sand, with roots	0		
2			Dirty tan, moist, silty sand, with trace pebbles	0		
3			Dirty tan, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY	GRAVEL	SILTLY SAND
SANDY CLAY	SAND	

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B2-13

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black, moist, silty sand, with trace pebbles	0		GP
1			Dirty brown, moist, silty sand, with trace pebbles	0		
2			Dirty brown, moist, silty clay, with trace pebbles	0		
3			Dirty brown, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe; SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-14

PROJECT: Johns Manville Subsurface Investigation: *Site 2 and Site 3*	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, dry, silty sand, with trace pebbles	0		
2			Dirty tan, moist, silty sand, with trace pebbles	0		
3			Dirty tan, moist, silty clay, with trace pebbles			
			Dirty tan, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B2-15

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Light gray, dry, silty clay	0		
2			Black, dry, silty clay			
			Black, dry, silty clay			
			Black, dry, silty sand, with trace pebbles	0		
3			Tan, moist, well sorted, sand			
			Tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe
SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-16

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black to tan, moist, silty sand, with roots	0		
2			Black to tan, moist, silty sand, with trace pebbles	0		
3			Dirty tan, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-17

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black to tan, moist, silty sand, with trace pebbles	0		
2			Dirty tan, moist, silty sand, with trace pebbles	0		
3			Dirty tan, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B2-18

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty clay, with roots	0		
			Dirty tan, moist, silty sand, with roots			
2			Dirty tan, moist, silty sand, with trace pebbles	0		
3			Dirty gray, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
SILTY CLAY	GRAVEL	SILTLY SAND	
SANDY CLAY	SAND		

CC = Continuous Core	ST = Shelby Tube	GP = Geo-Probe
SS = Split Spoon	AS = AugerSample	HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-19

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
			Dirty tan, moist, silty sand, with roots			
1			Dirty tan, moist, silty sand, with roots	0		
2			Light gray, moist, silty sand	0		
3			Light gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-21

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3
LOCATION: Waukegan, IL
TOTAL DEPTH: 4 feet
TOC ELEV.: N/A
DRILLING COMPANY: Terra Trace
DRILLER: Mike
LOCATION: Refer to Site Map

PROJECT NO. **98000701**
BOREHOLE DIA. 2 inches
DEPTH TO WATER *not encountered*
DRILLING METHOD: GP
DATE DRILLED: 12/10/98
GEOLOGIST: Jeff Stringer
COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black to tan, dry, silty sand, with trace pebbles	0		GP
1			Dirty gray, dry, silty clay, with trace pebbles	0		
2			Dirty brown, dry, silty sand, with trace pebbles	0		
3			Light gray, dry, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe
SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-22

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, dry, silty sand, with trace pebbles	0		
			Tan, dry, silty clay, with trace pebbles			
2			Dirty tan, dry, silty sand, with trace pebbles	0		
3			Black, dry, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-23

PROJECT: *Johns Manville Subsurface Investigation:* Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Dirty tan, moist, silty sand, with roots			
2			Dirty tan, moist, silty sand, with roots	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-25

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty sand, with trace pebbles	0		
2			Dark gray, moist, silty sand, with trace pebbles	0		
3			Dark gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-26

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER *not encountered*
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with trace pebbles	0		
			Dirty tan, moist, silty clay			
2			Dirty gray, moist, silty clay, with roots			
			Dirty gray to tan, moist, silty sand, with trace pebbles	0		
3			Dirty gray to tan, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
SILTY CLAY	GRAVEL	SILTLY SAND	
SANDY CLAY	SAND		

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-27

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, wet, silty clay, with grass and roots	0		
2			Dark gray, moist, silty sand	0		
3			Dark gray, moist, poorly sorted sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-29

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Dirty tan, dry, silty sand, with trace pebbles	0		GP
			Dirty gray, dry, silty clay, with trace pebbles			
1			Dirty gray, dry, silty clay, with trace pebbles	0		
2			Dirty gray, dry, silty clay, with trace pebbles	0		
			Dirty gray, moist, silty sand			
3			Dirty gray, moist, silty sand	0		
			Dirty gray, moist, silty clay, with trace pebbles			
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B2-30

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with roots	0		
			Dirty gray, moist, silty clay, with roots			
2			Dirty gray, moist, silty clay	0		
3			Black, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B2-31

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, dry, silty sand	0		
2			Dirty gray, moist, silty clay, with roots			
			Dirty gray, moist, silty clay, with roots	0		
3			Dark gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-33

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black to tan, dry, silty sand, with trace pebbles	0		GP
1			Dirty gray, dry, silty clay, with trace pebbles	0		
2			Dirty gray, dry, silty clay, with trace pebbles	0		
3			Dirty gray, dry, silty clay, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe
SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-34

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, dry, silty sand, with trace pebbles	0		
			Dirty gray, dry, silty clay, with trace pebbles			
2			Dark gray, moist, silty clay, with trace pebbles	0		
3			Gray, moist, poorly sorted, sand			
			Gray, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe; SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-35

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty sand			
			Dirty gray, moist, silty clay	0		
2			Dirty gray, moist, silty clay			
				0		
			Dirty gray, moist, silty sand			
3			Dirty gray, moist, silty sand			
				0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
SILTY CLAY	GRAVEL	SILTLY SAND	
SANDY CLAY	SAND		

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-36

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
	BOREHOLE DIA. 2 inches
LOCATION: Waukegan, IL	DEPTH TO WATER not encountered
TOTAL DEPTH: 4 feet	DRILLING METHOD: GP
TOC ELEV.: N/A	DATE DRILLED: 12/11/98
DRILLING COMPANY: Terra Trace	GEOLOGIST: Jeff Stringer
DRILLER: Mike	
LOCATION: Refer to Site Map	COMMENTS: Composite to 5'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black to tan, moist, silty sand, with roots	0		
2			Tan, moist, poorly sorted, sand	0		
3			Dark gray, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 5 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B2-37

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black, dry, silty sand, with trace pebbles	0		GP
1			Dirty gray, moist, silty clay	0		
2			Dirty gray, moist, silty clay	0		
3			Dirty gray, moist, silty clay	0		
			Dirty gray, moist, silty sand			
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-38

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty clay	0		
2			Dirty tan, moist, silty clay	0		
3			Dirty tan, moist, silty clay	0		
4			Black, moist, silty sand			GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B2-40

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 5'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Dirty brown, dry, silty sand, with roots	0		GP
1			Tan, moist, poortly sorted, sand	0		
2			Dirty gray, moist, poortly sorted, sand	0		
3			Dirty gray, moist, poortly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 5 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-41

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Dirty tan, dry, silty sand, with trace pebbles	0		GP
1			Dirty gray, dry, silty clay	0		
2			Dirty tan, dry, silty clay	0		
			Tan, dry, poorly sorted, sand			
3			Dirty tan, moist, silty clay			
			Dirty tan, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-42

PROJECT: *Johns Manville Subsurface Investigation:* Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty sand, with roots	0		
2			Tan, moist, silty sand	0		
3			Black to dirty gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = *Continuous Core*; ST = *Shelby Tube*; GP = *Geo-Probe*; SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-43

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER *not encountered*
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			*Dirty gray, moist, silty sand, with trace pebbles*	0		
3			Dirty gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-45

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black, dry, silty sand, with trace pebbles	0		GP
			Dirty tan, dry, silty clay, with trace pebbles			
1			Dirty tan, moist, silty clay, with trace pebbles	0		
2			Dirty tan, moist, silty clay, with trace pebbles	0		
3			Dirty tan, moist, silty clay, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-46

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty brown, dry, silty sand, with trace pebbles	0		
2			Dirty gray, moist, silty sand, with trace pebbles	0		
3			Dirty gray, moist, silty sand, with trace pebbles	0		
			Dirty gray, moist, silty sand			
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B2-47

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dark gray, moist, silty sand, with trace pebbles	0		
2			Dirty tan, moist, silty sand, with trace pebbles	0		
3			Dirty tan, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B2-47 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 5'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand	0		
			Dark gray, moist, silty clay			
2			Tan to brown, moist, silty sand	0		
3			Dark gray, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 5 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe; SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-49

PROJECT: *Johns Manville Subsurface Investigation:* Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black to tan, dry, silty sand, with trace pebbles	0		GP
1			Tan,dry, silty sand	0		
2			Tan, moist, silty sand	0		
			Dirty gray, moist, silty clay			
3			Dirty gray, moist, silty clay	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

	SILTY CLAY		GRAVEL		SILTLY SAND
	SANDY CLAY		SAND		

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe

SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-50

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty sand, with trace pebbles	0		
2			Dirty tan, moist, silty sand	0		
3			Dark gray, moist, silty clay	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

	SILTY CLAY		GRAVEL		SILTLY SAND
	SANDY CLAY		SAND		

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe

SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-51

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
	BOREHOLE DIA. 2 inches
LOCATION: Waukegan, IL	*DEPTH TO WATER not encountered*
TOTAL DEPTH: 4 feet	DRILLING METHOD: GP
TOC ELEV.: N/A	DATE DRILLED: 12/10/98
DRILLING COMPANY: Terra Trace	GEOLOGIST: Jeff Stringer
DRILLER: Mike	
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description *Soil Classification*	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			*Dirty tan to gray, moist, silty sand, with trace pebbles*	0		
2			Dirty tan to gray, moist, silty sand, with trace pebbles	0		
3			Dirty gray, moist, silty clay, with trace pebbles			
			Dirty tan, moist, poorly sorted, sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-52

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Tan, moist, loose, poorly sorted, sand			
2			Tan, moist, loose, poorly sorted, sand	0		
3			Tan, moist, loose, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-52 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Tan, moist, poorly sorted, sand	0		GP
1			Tan, moist, poorly sorted, sand	0		
2			Tan, moist, poorly sorted, sand	0		
3			Tan, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-53

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER *not encountered*
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description *Soil Classification*	Sample OVM	Sample Int.	Sample Type
0			Black, dry, silty sand, with roots	0		GP
1			Dirty tan, dry, silty clay	0		
2			Dirty tan, dry, silty clay			
			Dirty tan, moist, well sorted, sand	0		
3			Dirty tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-54

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Tan, moist, poorly sorted, sand, with trace pebbles	0		
3			Tan, moist, poorly sorted, sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-54 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, dry, silty sand	0		
2			Tan, moist, poorly sorted, loose, sand	0		
3			Tan, moist, poorly sorted, loose, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-54 REDO REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 5'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
			Dirty brown, moist, silty sand, with roots			
1			Tan, moist, poorly sorted, sand	0		
2			Tan, moist, poorly sorted, sand	0		
3			Tan, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 5 feet BGS			

Legend

	SILTY CLAY		GRAVEL		SILTLY SAND
	SANDY CLAY		SAND		

CC = Continuous Core	ST = Shelby Tube	GP = Geo-Probe
SS = Split Spoon	AS = AugerSample	HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-56

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
	BOREHOLE DIA. 2 inches
LOCATION: Waukegan, IL	DEPTH TO WATER not encountered
TOTAL DEPTH: 4 feet	DRILLING METHOD: GP
TOC ELEV.: N/A	DATE DRILLED: 12/11/98
DRILLING COMPANY: Terra Trace	GEOLOGIST: Jeff Stringer
DRILLER: Mike	
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Tan, moist, poorly sorted, sand			
2			Tan, moist, poorly sorted, sand	0		
3			Tan, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B2-59

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Tan, moist, poorly sorted, sand, with trace pebbles	0		
3			Tan, moist, poorly sorted, sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-61

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, moist, poorly sorted, sand, with trace pebbles	0		
2			Tan, moist, poorly sorted, sand, with trace pebbles	0		
3			Tan, moist, poorly sorted, sand, with trace 1/2" cobbles	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-62

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, moist, poorly sorted, sand, with trace pebbles and 1/2" cobble	0		
2			Tan, moist, poorly sorted, sand, with trace pebbles and 1/2" cobble	0		
3			Tan, moist, poorly sorted, sand, with trace pebbles and 1/2" cobble	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-63

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, moist, poorly sorted, sand, with trace pebbles and 1/4" cobble	0		
2			Tan, moist, poorly sorted, sand, with trace pebbles and 1/4" cobble	0		
3			Tan, moist, poorly sorted, sand, with trace pebbles and 1/4" cobble	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-64

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dark tan, moist, poorly sorted, sand, with trace pebbles	0		
2			Dark tan, moist, poorly sorted, sand, with trace pebbles	0		
3			Dark tan, moist, poorly sorted, sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-69

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Tan, moist, poorly sorted, sand, with trace pebbles	0		
3			Tan, moist, poorly sorted, sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-69 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, moist, poorly sorted, sand	0		
2			Tan, moist, poorly sorted, sand	0		
3			Tan, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-70

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 5'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, moist, poorly sorted, sand	0		
2			Tan, moist, poorly sorted, sand, with 1/4" cobbles	0		
3			Tan, moist, poorly sorted, sand, with 1/4" cobbles	0		
4						GP
5						
6			Boring Terminus @ 5 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; SS = Split Spoon; ST = Shelby Tube; AS = AugerSample; GP = Geo-Probe; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-71

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 5'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, moist, poorly sorted, sand, with trace pebbles and 1/4" cobble	0		
2			Tan, moist, poorly sorted, sand, with trace pebbles and 1/4" cobble	0		
3			Tan, moist, poorly sorted, sand, with trace pebbles and 1/4" cobble	0		
4						GP
5						
6			Boring Terminus @ 5 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-72

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, moist, poorly sorted, sand, with trace cobbles 1/4"-1/2"	0		
2			Tan, moist, poorly sorted, sand, with trace cobbles 1/4"-1/2"	0		
3			Tan, moist, poorly sorted, sand, with trace cobbles 1/4"-1/2"	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe; SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-75

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 5'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
			Dark brown, moist, poorly sorted, sand			
1			Tan, moist, poorly sorted, sand	0		
2			Tan, moist, poorly sorted, sand	0		
3			Tan, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 5 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B2-76

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 5'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Dirty tan, moist, silty sand	0		GP
1			Dirty tan, moist, silty sand	0		
2			Tan, moist, poorly sorted, sand	0		
3			Gray, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 5 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-77

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 5'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, dry, silty sand, with trace pebbles			
			Dirty tan, moist, poorly sorted, sand	0		
2			Dirty tan, moist, poorly sorted, sand	0		
3			Tan to gray, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 5 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-78

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Dirty tan, moist, poorly sorted, sand	0		GP
1			Dirty tan to gray, moist, poorly sorted, sand	0		
2			Gray, moist, poorly sorted, silty sand	0		
3			Gray, moist, poorly sorted, silty sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-79

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/11/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Dirty tan, moist, poorly sorted, sand	0		GP
1			Dirty tan, moist, poorly sorted, sand	0		
2			Dirty tan, moist, poorly sorted, sand	0		
3			Gray, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B2-80

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, moist, poorly sorted, sand	0		
2			Tan, moist, poorly sorted, sand	0		
3			Gray, moist, poorly sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B2-81

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Tan, moist, silty sand	0		GP
1			Tan, moist, silty sand	0		
2			Gray, moist, silty sand	0		
3			Gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-1

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Black, wet, silty sand, with trace pebbles	0		
3			Black, wet, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core	ST = Shelby Tube	GP = Geo-Probe
SS = Split Spoon	AS = AugerSample	HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-1 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, gravel fill mixture with silty sand	0		
2			Black, moist, gravel fill mixture with silty sand	0		
3			Gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-2

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with roots	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-3

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER *not encountered*
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with roots	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-4

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-4 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/10/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
			Black, moist, silty sand			
1			Black, wet, gravel fill mixture with silty sand	0		
2			Black, wet, gravel fill mixture with silty sand	0		
3			Gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core — ST = Shelby Tube — GP = Geo-Probe

SS = Split Spoon — AS = AugerSample — HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-5

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, wet, silty sand, with trace pebbles	0		
2			Black, wet, silty sand, with trace pebbles	0		
3			Tan, dry, gravel	0		
			Black, moist, sandy clay			
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

	SILTY CLAY		GRAVEL		SILTLY SAND
	SANDY CLAY		SAND		

CC = Continuous Core	ST = Shelby Tube	GP = Geo-Probe
SS = Split Spoon	AS = AugerSample	HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B3-6

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Black, moist, silty sand, with trace pebbles			
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY	GRAVEL	SILTLY SAND
SANDY CLAY	SAND	

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe

SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-7

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with trace pebbles	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B3-8

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with trace pebbles	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-9

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with trace pebbles	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Dirty tan, moist, silty sand, with trace pebbles with 4" bright yellow gravel seam	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-10

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, dry, silty sand	0		
2			Black, dry, silty sand	0		
3			Gray, dry, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-11

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty clay, with roots	0		
2			Dirty tan, dry, silty clay	0		
			Black, moist, silty sand, with trace pebbles			
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-12

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black, moist, silty sand, with trace pebbles	0		GP
1			Black, moist, silty sand, with trace pebbles	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
			Black, moist, well sorted, sand			
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
SILTY CLAY	GRAVEL	SILTLY SAND	
SANDY CLAY	SAND		

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-12 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, gravel fill mixture with silty sand	0		
2			Black, moist, gravel fill mixture with silty sand	0		
3			Gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-13 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 5'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black, moist, gravel fill mixture with silty sand	0		GP
1			Black, moist, gravel fill mixture with silty sand	0		
2			Black, moist, gravel fill mixture with silty sand	0		
3			Gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 5 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe
SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-14

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			No Recovery	0		
3			Black, moist, silty sand, with trace pebbles			
			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core	ST = Shelby Tube	GP = Geo-Probe
SS = Split Spoon	AS = AugerSample	HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B3-14 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, gravel fill mixture with silty sand	0		
2			Black, moist, gravel fill mixture with silty sand	0		
3			Gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-15

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-15 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black, moist, silty sand	0		GP
1			Black, wet, gravel fill mixture with silty sand	0		
2			Black, wet, gravel fill mixture with silty sand	0		
3			Black, wet, gravel fill mixture with silty sand Black to tan, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe
SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-16

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with roots	0		
2			Raw asbestos material seam, light gray, moist with black, moist, silty sand, with trace pebbles	0		
3			Dirty tan, moist, poorly sorted, sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe; SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-17

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER *not encountered*
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-17 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: *Composite to 6'*

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
			Black, moist, silty sand			
1			Black, moist, gravel fill mixture with silty sand	0		
2			Black, moist, gravel fill mixture with silty sand	0		
3			Gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core	ST = Shelby Tube	GP = Geo-Probe
SS = Split Spoon	AS = AugerSample	HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-18

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Black, moist, silty sand, with roots			
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
SILTY CLAY	GRAVEL	SILTLY SAND	
SANDY CLAY	SAND		

CC = Continuous Core	ST = Shelby Tube	GP = Geo-Probe
SS = Split Spoon	AS = AugerSample	HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-19

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Tan, dry, silty clay with roots			
2			Black, dry, silty sand, with trace pebbles	0		
3			Dirty gray, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-20

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty gray, dry, silty clay with roots	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-21

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Black, moist, silty sand, with trace pebbles			
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B3-22

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan, dry, silty clay	0		
2			Dirty gray, moist, silty sand, with trace pebbles	0		
3			Dirty gray, wet, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

	SILTY CLAY		GRAVEL		SILTLY SAND
	SANDY CLAY		SAND		

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe

SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-23

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Black, moist, silty sand, with roots			
2			Black, moist, silty sand, with trace pebbles and roots	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-24

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-24 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black, moist, silty sand	0		GP
1			Black, moist, gravel fill mixture with silty sand	0		
2			Black, moist, gravel fill mixture with silty sand	0		
3			Dirty gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe; SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-25

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3

LOCATION: Waukegan, IL

TOTAL DEPTH: 4 feet

TOC ELEV.: N/A

DRILLING COMPANY: Terra Trace

DRILLER: Mike

LOCATION: Refer to Site Map

PROJECT NO. **98000701**

BOREHOLE DIA. 2 inches

DEPTH TO WATER not encountered

DRILLING METHOD: GP

DATE DRILLED: 12/9/98

GEOLOGIST: Jeff Stringer

COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Tan to black, moist, silty sand, with roots	0		
3			Raw asbestos material, moist, gray with tan, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-25 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dark brown, moist, silty sand			
			Tan, moist, silty sand	0		
2			Tan, moist, silty sand			
			Gray, moist, silty sand	0		
3			Dirty gray, moist, silty sand			
				0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-26

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty clay	0		
			Black, moist, silty sand, with roots			
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY	GRAVEL	*SILTLY SAND*
SANDY CLAY	SAND	

CC = Continuous Core	ST = Shelby Tube	GP = Geo-Probe
SS = Split Spoon	AS = AugerSample	HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-27

PROJECT: *Johns Manville Subsurface Investigation:* Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Black, moist, silty sand			
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core	ST = Shelby Tube	GP = Geo-Probe
SS = Split Spoon	AS = AugerSample	HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B3-28

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Tan, dry, silty sand, with roots			
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-29

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Dirty gray, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

ELM Consulting

BORING NUMBER B3-29 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: *Refer to Site Map*	COMMENTS: *Composite to 6'*

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black to gray, moist, gravel fill mixture with silty sand	0		
2			Black to gray, moist, gravel fill mixture with silty sand	0		
3			Dark gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-30

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, dry, silty sand	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Gray to black, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-31

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER *not encountered*
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			*No Recovery*	0		
			Black, moist, silty sand			
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4			Black to tan, moist, poorly sorted, sand			GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-32

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Tan to Black, dry, silty sand, with trace pebbles	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-33

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-33 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Black, moist, silty sand	0		GP
1			Black, moist, silty sand with gravel fill mixture	0		
2			Black, moist, silty sand with gravel fill mixture	0		
3			Gray to tan, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-34

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, silty clay, with roots	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-35

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Dark brown, dry, silty sand	0		GP
1			Gray, moist, silty clay	0		
2			Gray, moist, silty clay, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
	SILTY CLAY	GRAVEL	SILTLY SAND
	SANDY CLAY	SAND	

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-36

PROJECT: *Johns Manville Subsurface Investigation:* Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Dark brown, moist, silty sand, with roots			
2			Dirty gray, moist, silty clay, with roots	0		
3			Dirty gray, moist, sandy clay	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY	GRAVEL	SILTLY SAND
SANDY CLAY	SAND	

CC = Continuous Core — ST = Shelby Tube — GP = Geo-Probe

SS = Split Spoon — AS = AugerSample — HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-37

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			Dirty brown, moist, silty clay, with roots	0		GP
1			Dirty brown, moist, silty clay	0		
2			Black, moist, silty sand, with trace pebbles	0		
			Dirty gray, moist, silty clay			
3			Dirty gray, moist, silty clay	0		
			Black, moist, silty sand, with trace pebbles			
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-38

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Black, moist, silty sand, with roots			
2			Black, moist, silty sand, with trace pebbles	0		
			Black and tan, moist, well sorted, sand			
3			Tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-39

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with trace pebbles	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-40

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty brown, moist, silty sand	0		
2			Dirty tan, moist, poorly sorted, sand with trace pebbles	0		
3			Dirty tan, moist, poorly sorted, sand with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-42

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty tan, moist, well sorted, sand	0		
2			Dirty tan, moist, well sorted, sand	0		
3			Tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-43

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with roots	0		
2			Black, moist, well sorted, sand	0		
3			Tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-44

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
			Black, moist, silty sand, with roots			
1			Black, moist, silty sand	0		
2			Black, moist, silty sand	0		
3			Tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
SILTY CLAY	GRAVEL	SILTLY SAND	
SANDY CLAY	SAND		

CC = Continuous Core	ST = Shelby Tube	GP = Geo-Probe
SS = Split Spoon	AS = AugerSample	HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-45

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
			Dark brown, moist, silty sand			
2			Dirty gray, dry, silty clay			
			Black, moist, silty sand, with trace pebbles	0		
3			Dirty gray, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-46

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty gray, moist, silty clay	0		
2			Dirty gray, moist, silty clay, with trace pebbles	0		
3			Dirty gray, moist, silty clay, with trace pebbles	0		
4			Black, moist, silty sand, with trace pebbles			GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend: SILTY CLAY; SANDY CLAY; GRAVEL; SAND; SILTLY SAND

CC = Continuous Core; ST = Shelby Tube; GP = Geo-Probe

SS = Split Spoon; AS = AugerSample; HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-47

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Black, moist, silty sand, with trace pebbles	0		
2			Black, moist, well sorted, sand	0		
			Tan, moist, well sorted, sand			
3			Tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-48

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dirty gray, moist, silty sand	0		
2			Black, moist, silty sand, with trace pebbles	0		
			Black, moist, poorly sorted, sand			
3			Tan, moist, well sorted, sand	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend			
SILTY CLAY	GRAVEL	SILTLY SAND	
SANDY CLAY	SAND		

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

E L M Consulting

BORING NUMBER B3-50

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/9/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS:

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			No Recovery	0		
2			Black, moist, silty sand, with trace pebbles	0		
3			Black, moist, silty sand, with trace pebbles	0		
4						GP
5						
6			Boring Terminus @ 4 feet BGS			

Legend

SILTY CLAY
SANDY CLAY
GRAVEL
SAND
SILTLY SAND

CC = Continuous Core
SS = Split Spoon
ST = Shelby Tube
AS = AugerSample
GP = Geo-Probe
HSA = Hollow-Stem Auger

E L M C o n s u l t i n g

BORING NUMBER B3-50 REDO

PROJECT: Johns Manville Subsurface Investigation: Site 2 and Site 3	PROJECT NO. **98000701**
LOCATION: Waukegan, IL	BOREHOLE DIA. 2 inches
TOTAL DEPTH: 4 feet	DEPTH TO WATER not encountered
TOC ELEV.: N/A	DRILLING METHOD: GP
DRILLING COMPANY: Terra Trace	DATE DRILLED: 12/14/98
DRILLER: Mike	GEOLOGIST: Jeff Stringer
LOCATION: Refer to Site Map	COMMENTS: Composite to 6'

Depth (ft)	Well Record	Graphic Log	Description Soil Classification	Sample OVM	Sample Int.	Sample Type
0			No Recovery	0		GP
1			Dark gray, moist, silty sand	0		
2			Black, moist, silty sand	0		
3			Dark gray, moist, silty sand	0		
4						GP
5						
6			Boring Terminus @ 6 feet BGS			

Legend			
SILTY CLAY	GRAVEL	SILTLY SAND	
SANDY CLAY	SAND		

CC = Continuous Core ST = Shelby Tube GP = Geo-Probe
SS = Split Spoon AS = AugerSample HSA = Hollow-Stem Auger

DRAFT

Appendix I

Raw Data for Total Lead Analyses for Site 2

RECRA LABNET - CHICAGO

INORGANICS DATA SUMMARY REPORT 12/23/98

CLIENT: ELM Consult-J Manville
WORK ORDER: 00000-000-000-0000-00-000

RECRA LOT #: 9812G497

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	B2-1a	Lead, Total	116	MG/KG	4.9
-002	B2-2a	Lead, Total	831	MG/KG	4.9
-003	B2-3a	Lead, Total	11.9	MG/KG	4.7
-004	B2-4a	Lead, Total	24.8	MG/KG	4.5
-005	B2-5a	Lead, Total	26.0	MG/KG	8.0
-006	B2-6a	Lead, Total	24.6	MG/KG	4.5
-007	B2-7a	Lead, Total	13.7	MG/KG	4.7
-008	B2-8a	Lead, Total	55.5	MG/KG	4.6
-009	B2-9a	Lead, Total	63.8	MG/KG	4.1
-010	B2-10a	Lead, Total	15.2	MG/KG	4.6
-011	B2-11a	Lead, Total	18.0	MG/KG	4.8
-012	B2-12a	Lead, Total	74.6	MG/KG	4.7
-013	B2-13a	Lead, Total	37.3	MG/KG	8.2
-014	B2-14a	Lead, Total	47.1	MG/KG	4.5
-015	B2-15a	Lead, Total	109	MG/KG	4.5
-016	B2-16a	Lead, Total	149	MG/KG	4.4
-017	B2-17a	Lead, Total	49.7	MG/KG	4.4
-018	B2-18a	Lead, Total	14.5	MG/KG	5.0
-019	B2-19a	Lead, Total	16.1	MG/KG	4.5
-020	B2-21a	Lead, Total	29.8	MG/KG	4.0

RECRA LABNET - CHICAGO

INORGANICS DATA SUMMARY REPORT 12/28/98

CLIENT: ELM Consult-J Manville
WORK ORDER: 00000-000-000-0000-00-000

RECRA LOT #: 9812G498

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	B2-22a	Lead, Total	11.1	MG/KG	4.2
-002	B2-23a	Lead, Total	98.1	MG/KG	4.8
-003	B2-25a	Lead, Total	20.3	MG/KG	4.4
-004	B2-26a	Lead, Total	56.2	MG/KG	4.6
-005	B2-27a	Lead, Total	55.8	MG/KG	5.0
-006	B2-30a	Lead, Total	36.0	MG/KG	4.9
-007	B2-31a	Lead, Total	14.1	MG/KG	4.6
-008	B2-33a	Lead, Total	11.5	MG/KG	4.3
-009	B2-37a	Lead, Total	16.8	MG/KG	4.3
-010	B2-38a	Lead, Total	14.1	MG/KG	4.7
-011	B2-41a	Lead, Total	11.0	MG/KG	4.0
-012	B2-45a	Lead, Total	14.2	MG/KG	8.8
-013	B2-53a	Lead, Total	29.2	MG/KG	4.3

RECRA LABNET - CHICAGO

INORGANICS DATA SUMMARY REPORT 12/28/98

CLIENT: ELM Consult-J Manville
WORK ORDER: 00000-000-000-0000-00-000

RECRA LOT #: 9812G513

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-001	B2-56A	Lead, Total	4.5	u	MG/KG	4.5
-002	B2-61A	Lead, Total	4.2	u	MG/KG	4.2
-003	B2-59A	Lead, Total	5.3		MG/KG	4.0
-004	B2-62A	Lead, Total	4.3	u	MG/KG	4.3
-005	B2-63A	Lead, Total	4.3	u	MG/KG	4.3
-006	B2-64A	Lead, Total	4.4	u	MG/KG	4.4
-007	B2-69A	Lead, Total	4.0	u	MG/KG	4.0
-008	B2-69A redo	Lead, Total	4.6	u	MG/KG	4.6
-009	B2-70A	Lead, Total	3.9	u	MG/KG	3.9
-010	B2-71A	Lead, Total	4.9	u	MG/KG	4.9
-011	B2-72A	Lead, Total	4.7	u	MG/KG	4.7
-012	B2-75A	Lead, Total	25.1		MG/KG	4.1
-013	B2-76A	Lead, Total	16.4		MG/KG	4.7
-014	B2-77A	Lead, Total	44.0		MG/KG	8.7
-015	B2-78A	Lead, Total	4.6	u	MG/KG	4.6
-016	B2-79A	Lead, Total	4.4	u	MG/KG	4.4
-017	B2-80A	Lead, Total	8.2		MG/KG	4.6
-018	B2-81A	Lead, Total	62.5		MG/KG	4.9

RECRA LABNET - CHICAGO

INORGANICS DATA SUMMARY REPORT 12/29/98

CLIENT: ELM Consult-J Manville
WORK ORDER: 00000-000-000-0000-00-000

RECRA LOT #: 9812G512

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	B2-1A redo	Lead, Total	140	MG/KG	4.6
-002	B2-4A redo	Lead, Total	8.7	MG/KG	4.5
-003	B2-29A Redo.	Lead, Total	18.2	MG/KG	4.5
-004	B2-34A	Lead, Total	22.2	MG/KG	8.4
-005	B2-35A	Lead, Total	17.8	MG/KG	4.6
-006	B2-36A	Lead, Total	38.5	MG/KG	5.0
-007	B2-40A	Lead, Total	43.1	MG/KG	4.6
-008	B2-42A	Lead, Total	133	MG/KG	4.7
-009	B2-43A	Lead, Total	11.4	MG/KG	8.2
-010	B2-46A	Lead, Total	15.6	MG/KG	4.2
-011	B2-47A	Lead, Total	35.9	MG/KG	5.0
-012	B2-47A redo	Lead, Total	55.4	MG/KG	4.8
-013	B2-49A	Lead, Total	18.1	MG/KG	4.8
-014	B2-50A	Lead, Total	26.0	MG/KG	4.8
-015	B2-51A	Lead, Total	33.4	MG/KG	4.5
-016	B2-52A	Lead, Total	4.1 u	MG/KG	4.1
-017	B2-52A redo	Lead, Total	4.1 u	MG/KG	4.1
-018	B2 54A	Lead, Total	4.3	MG/KG	4.2
-019	B2-54A redo	Lead, Total	20.2	MG/KG	4.2
-020	B2-54A redo II	Lead, Total	33.4	MG/KG	4.8

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Friday January 15th, 1999

RE: B2-2a
Project # 00000-000-000 0000
Lab ID: 9901G734-002
Sample Date: 12/09/98
Date Received: 12/14/98

TCLP Leachate Analysis Report

Parameters	Result	Units	Reporting Limit
Lead, TCLP	2.7	mg/L	0.050

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Friday January 15th, 1999

RE: B2-16a
Project # 00000-000-000-0000
Lab ID: 9901G734-004
Sample Date: 12/10/98
Date Received: 12/14/98

TCLP Leachate Analysis Report

Parameters	Result	Units	Reporting Limit
Lead, TCLP	0.078	mg/L	0.050

Committed To *Your* Success

Severn Trent Laboratories
2417 Bond Street
University Park, IL 60466

Tel: (708) 534-5200
Fax: (708) 534-5211
www.stl-inc.com

January 15, 1999

Mr. Jeff Stringer
ELM Consult
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

RE: Analytical Report
Lot 9901G734

Dear Mr. Stringer:

The enclosed analytical report is for the project and lot number listed above. Please be advised that Recra LabNet-Chicago was purchased by Severn Trent Laboratories, effective January 4, 1999. A formal letter of notification has been sent to your company. If you have any questions, please contact me at 708-534-5200.

Sincerely,
Severn Trent Laboratories

Jeffrey A. James
Project Manager

sj

Enclosures

Approved By:

Michael J. Healy
Vice President

The results presented in this report relate only to the analytical testing and conditions of sample at receipt. This report pertains to only those samples actually tested. All 9 pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Severn Trent Laboratories Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9901G734

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B2-2a							
LEAD, SERIAL DILUTIO	002 L	W	99GE515	12/09/98	12/14/98	01/12/99	01/13/99
LEAD, TCLP LEACHATE	002	W	99GE515	12/09/98	12/14/98	01/12/99	01/13/99
LEAD, TCLP LEACHATE	002 REP	W	99GE515	12/09/98	12/14/98	01/12/99	01/13/99
LEAD, TCLP LEACHATE	002 MS	W	99GE515	12/09/98	12/14/98	01/12/99	01/13/99
B2-16a							
LEAD, TCLP LEACHATE	004	W	99GE515	12/10/98	12/14/98	01/12/99	01/13/99
LAB QC:							
LEAD LABORATORY	LC1 BS	W	99GE515	N/A	N/A	01/12/99	01/13/99
LEAD LABORATORY	LC2 BS	W	99GE515	N/A	N/A	01/12/99	01/13/99
LEAD, TCLP LEACHATE	MB1	W	99GE515	N/A	N/A	01/12/99	01/13/99

SIGNATURE Lynn S. Sz DATE 1/15/99

NY CERTIFICATION # 11006

GLOSSARY OF DATA QUALIFIERS AND ABBREVIATIONS

Data Qualifiers

B	Compound was found in the blank and the sample
D	*Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also* compounds analyzed at a dilution will be flagged with a D
E	Concentration exceeds the instrument calibration range and was subsequently diluted
I	Appears on the "results spreadsheet" to indicate an interference
J	Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)
M	Summary Compound
(M)	Manually integrated compound
N	Positive ID of a TIC that is not quantitated against a standard and must be accompanied by a CAS No.
T	Compound was found in the TCLP extraction blank and the sample
u	Analyte was not detected at or above the reporting limit
X	Result obtained indirectly through calculation based on results from other analyses
Y	The chromatographic response resembles a typical fuel pattern
Z	The chromatographic response does not resemble a typical fuel pattern

Abbreviations

Batch	Designation given to identify a specific extraction, digestion or preparation set (equivalent to prep batch)
BS	Blank spike analysis was conducted on reagent grade water or a matrix free from the analyte of interest
BSD	Blank spike duplicate
BRL	Below reporting limit
CAP	Capillary Column
CD	Calculation factor used by the Laboratory's Information Management System (LIMS)
Contract	Contract laboratory identification code
DF	Dilution factor
DL	Appears in the sample ID to indicate a secondary dilution was performed
LCS/LC	Denotes laboratory control standard
LAB ID	The full 12 character laboratory identification number (equivalent to RFW#)
MB	Method blank or (PB) preparation blank
MS	Matrix spike
MSD	Matrix spike duplicate
NA	Not applicable
NC	Non-calculable precision due to insufficient concentration of analyte present in the sample
NR	Not required
NS	Not spiked
PACK	Packed Column
RE	Appears in the sample ID to indicate a re-analysis
REP	Replicate analysis
Reprep	Sample was reprepared and then reanalyzed
RFW#	The full 12 character laboratory identification number (equivalent to LAB ID)
RFW Lot	The first 8 characters of the RFW#
RPD	Relative percent difference of duplicate (unrounded) analyses
RRF	Relative response factor
RT	Retention time
RTW	Retention time window
SP	Blank spike, blank spike duplicate, matrix spike or matrix spike duplicate
WO#	Work order no. code used to define a specific client, job, phase and task

NOTES:

- One or a combination of these data qualifiers and abbreviations may appear in the analytical report.
- Soil, sediment and sludge results are reported on a dry weight basis except when analyzed for landfill disposal or incineration parameters. All other results on a solid matrix are reported on an "as received" basis unless noted differently.
- Reporting limits are adjusted for preparation sample size, sample dilutions and sample moisture content if analyzed on a dry weight basis.

Severn Trent Laboratories Chicago
METALS METHOD REFERENCE

The following methods are used as reference for the analysis of samples contained with this RFW Lot: 9901G734

SW846	✓ **6010A** __ **6010B** __Ag __Al __As __B __Ba ✓Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P ✓Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __Ag7761 __As7060A __Cd7131A __Cr7191 __Cu7211 __Hg7470A __Hg7471A __Pb7421 __Sb7041 __Se7740 __Tl7841 __CN 9010A __CN 9010B/9014
EPA	**200.7** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P __Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __Ag272.2 __As206.2 __Cd213.2 __Cr218.2 __Cu220.2 __Hg245.1 __Hg245.5 __Pb239.2 __Sb204.2 __Se270.2 __Tl279.2 **200.9** __As __Cd __Pb __Sb __Se __Tl
CLP **ILM04.0**	**200.7 CLP-M** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P __Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __As206.2 __Cd213.2 __Hg245.1 __Hg245.5 __Pb239.2 __Sb204.2 __Se270.2 __Tl279.2 __CN335.2
Digestion Method	**SW846** __3005A ✓__3010A __3020A __3020A(+H_2O_2) __3050A __7060A/7740 __7470A __7471A __3050B **EPA** __200.7 __200.0(+H_2O_2) __200.9(-HCL;+H_2O_2) **USEPA/CLP** __ILM04.0 Exhibit D, Section III
Extraction Method	**SW846** ✓__1311TCLP __1312SPLP __1320MEP Using TCLP **ASTM** **CAM Title 22** __D3987 Neutral Leach __W.E.T.
%Solids	__SM 2540G __ASTM D2216 __Exhibit D Part F

CHI-22-05-002/K-1/99

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Friday January 15th, 1999

RE: **B2-2a**
Project # 00000-000-000-0000
Lab ID: **9901G734-002**
Sample Date: 12/09/98
Date Received: 12/14/98

TCLP Leachate Analysis Report

Parameters	Result	Units	Reporting Limit
Lead, TCLP	2.7	mg/L	0.050

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Friday January 15th, 1999

RE: B2-16a
Project # 00000-000-000-0000
Lab ID: 9901G734-004
Sample Date: 12/10/98
Date Received: 12/14/98

TCLP Leachate Analysis Report

Parameters	Result	Units	Reporting Limit
Lead, TCLP	0.078	mg/L	0.050

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Friday January 15th, 1999

Project # 00000-000-000-0000
Lab Batch: 9901G734

Inorganic Method Blank Data Report

Sample	Lab ID	Parameter	Result		Units	Reporting Limit
Blank 1	99GE515-MB1	Lead, TCLP	0.050	u	mg/L	0.050

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Friday January 15th, 1999

Project # 00000-000-000-0000
Lab Batch: **9901G734**

Inorganic Precision Data Report

Sample	Site ID	Parameter	Initial Result	Replicate	RPD
-002REP	B2-2a	Lead, Leachate	2.7	2.6	4.

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Friday January 15th, 1999

Project # 00000-000-000-0000
Lab Batch: 9901G734

Inorganic Accuracy Data Report

Sample	Site ID	Parameter	Spiked Sample	Initial Result	Spiked Amount	% Recov
[redacted]-002	B2-2a	Lead, Leachate	6.2	2.7	5.0	70.5

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Friday January 15th, 1999

Project # 00000-000-000-0000
Lab Batch: **9901G734**

Inorganic Laboratory Control Standards Report

Lab ID	Parameter	Spiked Amount	Units	Spike #1 % Recov.	Spike #2 % Recov.	RPD
99GE515-LC1	Lead, LCS	0.50	mg/L	99.1	98.5	0.59

RECRA
LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

December 29, 1998

Mr. Jeff Stringer
ELM Consulting
18-2 E. Dundee Rd. Ste. 100
Barrington, IL 60010

RE: J Manville
Lot 9812G512

Dear Mr. Stringer:

The enclosed analytical report is for the project and lot number listed above. If you have any questions, please contact me at 708-534-5200.

Sincerely,

Recra LabNet - Chicago

Jeffrey A. James
Project Manager

pmb

Enclosures

Approved By:

Michael J. Healy
Vice President

The results presented in this report relate only to the analytical testing and conditions of sample at receipt. This report pertains to only those samples actually tested. All 31 pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

2417 Bond Street • University Park, IL 60466-3182 • (708) 534-5200 • Fax (708) 534-5211

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G512

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B2-1A redo							
% SOLIDS	001	S	98GTS706	12/11/98	12/15/98	12/16/98	12/16/98
% SOLIDS	001 REP	S	98GTS706	12/11/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	001	S	98GI576	12/11/98	12/15/98	12/17/98	12/21/98
B2-4A redo							
% SOLIDS	002	S	98GTS706	12/11/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	002	S	98GI576	12/11/98	12/15/98	12/17/98	12/21/98
B2-29A Redo							
% SOLIDS	003	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	003	S	98GI576	12/10/98	12/15/98	12/17/98	12/21/98
B2-34A							
% SOLIDS	004	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	004	S	98GI576	12/10/98	12/15/98	12/17/98	12/22/98
B2-35A							
% SOLIDS	005	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	005	S	98GI576	12/10/98	12/15/98	12/17/98	12/21/98
B2-36A							
% SOLIDS	006	S	98GTS706	12/11/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	006	S	98GI576	12/11/98	12/15/98	12/17/98	12/21/98
B2-40A							
% SOLIDS	007	S	98GTS706	12/11/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	007	S	98GI576	12/11/98	12/15/98	12/17/98	12/21/98
B2-42A							
% SOLIDS	008	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G512

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
LEAD, TOTAL	008	S	98GI576	12/10/98	12/15/98	12/17/98	12/21/98
B2-43A							
% SOLIDS	009	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	009	S	98GI576	12/10/98	12/15/98	12/17/98	12/23/98
B2-46A							
% SOLIDS	010	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	010	S	98GI576	12/10/98	12/15/98	12/17/98	12/21/98
B2-47A							
% SOLIDS	011	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, SERIAL DILUTIO	011 L	S	98GI595	12/10/98	12/15/98	12/23/98	12/29/98
LEAD, TOTAL	011	S	98GI595	12/10/98	12/15/98	12/23/98	12/29/98
LEAD, TOTAL	011 REP	S	98GI595	12/10/98	12/15/98	12/23/98	12/29/98
LEAD, TOTAL	011 MS	S	98GI595	12/10/98	12/15/98	12/23/98	12/29/98
B2-47A redo							
% SOLIDS	012	S	98GTS706	12/11/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	012	S	98GI576	12/11/98	12/15/98	12/17/98	12/21/98
B2-49A							
% SOLIDS	013	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	013	S	98GI576	12/10/98	12/15/98	12/17/98	12/21/98
B2-50A							
% SOLIDS	014	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	014	S	98GI576	12/10/98	12/15/98	12/17/98	12/21/98
B2-51A							
% SOLIDS	015	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	015	S	98GI576	12/10/98	12/15/98	12/17/98	12/21/98

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G512

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B2-52A							
% SOLIDS	016	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	016	S	98GI576	12/10/98	12/15/98	12/17/98	12/21/98
B2-52A redo							
% SOLIDS	017	S	98GTS706	12/11/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	017	S	98GI576	12/11/98	12/15/98	12/17/98	12/21/98
B2-54A							
% SOLIDS	018	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	018	S	98GI576	12/10/98	12/15/98	12/17/98	12/21/98
B2-54A redo							
% SOLIDS	019	S	98GTS706	12/10/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	019	S	98GI576	12/10/98	12/15/98	12/17/98	12/21/98
B2-54A redo II							
% SOLIDS	020	S	98GTS706	12/11/98	12/15/98	12/16/98	12/16/98
LEAD, TOTAL	020	S	98GI576	12/11/98	12/15/98	12/17/98	12/21/98

LAB QC:

LEAD LABORATORY	LC1 BS	S	98GI576	N/A	N/A	12/17/98	12/21/98
LEAD LABORATORY	LC2 BS	S	98GI576	N/A	N/A	12/17/98	12/21/98
LEAD, TOTAL	MB1	S	98GI576	N/A	N/A	12/17/98	12/21/98
LEAD LABORATORY	LC1 BS	S	98GI595	N/A	N/A	12/23/98	12/29/98
LEAD LABORATORY	LC2 BS	S	98GI595	N/A	N/A	12/23/98	12/29/98
LEAD, TOTAL	MB1	S	98GI595	N/A	N/A	12/23/98	12/29/98

SIGNATURE [signature] DATE 12/29/98

NY CERTIFICATION # 11006

GLOSSARY OF DATA QUALIFIERS AND ABBREVIATIONS

Data Qualifiers

B	Compound was found in the blank and the sample
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D
E	Concentration exceeds the instrument calibration range and was subsequently diluted
I	Appears on the "results spreadsheet" to indicate an interference
J	Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)
M	Summary Compound
(M)	Manually integrated compound
N	Positive ID of a TIC that is not quantitated against a standard and must be accompanied by a CAS No.
T	Compound was found in the TCLP extraction blank and the sample
u	Analyte was not detected at or above the reporting limit
X	Result obtained indirectly through calculation based on results from other analyses
Y	The chromatographic response resembles a typical fuel pattern
Z	The chromatographic response does not resemble a typical fuel pattern

Abbreviations

Batch	Designation given to identify a specific extraction, digestion or preparation set (equivalent to prep batch)
BS	Blank spike analysis was conducted on reagent grade water or a matrix free from the analyte of interest
BSD	Blank spike duplicate
BRL	Below reporting limit
CAP	Capillary Column
CD	Calculation factor used by the Laboratory's Information Management System (LIMS)
Contract	Contract laboratory identification code
DF	Dilution factor
DL	Appears in the sample ID to indicate a secondary dilution was performed
LCS/LC	Denotes laboratory control standard
LAB ID	The full 12 character Recra laboratory identification number (equivalent to RFW#)
MB	Method blank or (PB) preparation blank
MS	Matrix spike
MSD	Matrix spike duplicate
NA	Not applicable
NC	Non-calculable precision due to insufficient concentration of analyte present in the sample
NR	Not required
NS	Not spiked
PACK	Packed Column
RE	Appears in the sample ID to indicate a re-analysis
REP	Replicate analysis
Reprep	Sample was reprepared and then reanalyzed
RFW#	The full 12 character Recra laboratory identification number (equivalent to LAB ID)
RFW Lot	The first 8 characters of the RFW#
RPD	Relative percent difference of duplicate (unrounded) analyses
RRF	Relative response factor
RT	Retention time
RTW	Retention time window
SP	Blank spike, blank spike duplicate, matrix spike or matrix spike duplicate
WO#	Work order no. Recra code used to define a specific client, job, phase and task

NOTES:

- One or a combination of these data qualifiers and abbreviations may appear in the analytical report.
- Soil, sediment and sludge results are reported on a dry weight basis except when analyzed for landfill disposal or incineration parameters. All other results on a solid matrix are reported on an "as received" basis unless noted differently.
- Reporting limits are adjusted for preparation sample size, sample dilutions and sample moisture content if analyzed on a dry weight basis.

Recra LabNet - Chicago
METALS METHOD REFERENCE

The following methods are used as reference for the analysis of samples contained with this RFW Lot: 98126572

SW846	✓ **6010A** __ **6010B** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P ✓Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __Ag7761 __As7060A __Cd7131A __Cr7191 __Cu7211 __Hg7470A __Hg7471A __Pb7421 __Sb7041 __Se7740 __Tl7841 __CN 9010A __CN 9010B/9014
EPA	**200.7** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P __Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __Ag272.2 __As206.2 __Cd213.2 __Cr218.2 __Cu220.2 __Hg245.1 __Hg245.5 __Pb239.2 __Sb204.2 __Se270.2 __Tl279.2 **200.9** __As __Cd __Pb __Sb __Se __Tl
CLP **ILM04.0**	**200.7 CLP-M** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P __Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __As206.2 __Cd213.2 __Hg245.1 __Hg245.5 __Pb239.2 __Sb204.2 __Se270.2 __Tl279.2 __CN335.2
Digestion Method	**SW846** __3005A __3010A __3020A __3020A(+H_2O_2) ✓3050A __7060A/7740 __7470A __7471A __3050B **EPA** __200.7 __200.0(+H_2O_2) __200.9(-HCL;+H_2O_2) **USEPA/CLP** __ILM04.0 Exhibit D, Section III
Extraction Method	**SW846** __1311TCLP __1312SPLP __1320MEP Using TCLP **ASTM** __D3987 Neutral Leach **CAM Title 22** __W.E.T.
%Solids	__SM 2540G __ASTM D2216 __Exhibit D Part F

CHI-22-05-002/J-4/98

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-1A redo
Project # 00000-000-000-0000
Lab ID: 9812G512-001
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	85.0	%	0.10
Lead, Total	140	mg/kg	4.6

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-4A redo
Project # 00000-000-000-0000
Lab ID: 9812G512-002
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	91.1	%	0.10
Lead, Total	8.7	mg/kg	4.5

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Tuesday December 29th, 1998

RE: **B2-29A Redo**
Project # 00000-000-000-0000
Lab ID: **9812G512-003**
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	93.0	%	0.10
Lead, Total	18.2	mg/kg	4.5

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-34A
Project # 00000-000-000-0000
Lab ID: 9812G512-004
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	94.0	%	0.10
Lead, Total	22.2	mg/kg	8.4

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-35A
Project # 00000-000-000-0000
Lab ID: 9812G512-005
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	88.4	%	0.10
Lead, Total	17.8	mg/kg	4.6

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-36A
Project # 00000-000-000-0000
Lab ID: 9812G512-006
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	81.2	%	0.10
Lead, Total	38.5	mg/kg	5.0

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-40A
Project # 00000-000-000-0000
Lab ID: 9812G512-007
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	84.2	%	0.10
Lead, Total	43.1	mg/kg	4.6

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-42A
Project # 00000-000-000-0000
Lab ID: 9812G512-008
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	89.3	%	0.10
Lead, Total	133	mg/kg	4.7

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-43A
Project # 00000-000-000-0000
Lab ID: 9812G512-009
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	94.0	%	0.10
Lead, Total	11.4	mg/kg	8.2

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-46A
Project # 00000-000-000-0000
Lab ID: 9812G512-010
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	93.6	%	0.10
Lead, Total	15.6	mg/kg	4.2

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-47A
Project # 00000-000-000-0000
Lab ID: 9812G512-011
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	85.0	%	0.10
Lead, Total	35.9	mg/kg	5.0

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Tuesday December 29th, 1998

RE: **B2-47A redo**
Project # 00000-000-000-0000
Lab ID: **9812G512-012**
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	82.6	%	0.10
Lead, Total	55.4	mg/kg	4.8

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-49A
Project # 00000-000-000-0000
Lab ID: 9812G512-013
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	86.9	%	0.10
Lead, Total	18.1	mg/kg	4.8

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-50A
Project # 00000-000-000-0000
Lab ID: 9812G512-014
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	92.3	%	0.10
Lead, Total	26.0	mg/kg	4.8

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-51A
Project # 00000-000-000-0000
Lab ID: 9812G512-015
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	90.5	%	0.10
Lead, Total	33.4	mg/kg	4.5

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-52A
Project # 00000-000-000-0000
Lab ID: 9812G512-016
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	97.8		%	0.10
Lead, Total	4.1	u	mg/kg	4.1

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-52A redo
Project # 00000-000-000-0000
Lab ID: 9812G512-017
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	97.2		%	0.10
Lead, Total	4.1	u	mg/kg	4.1

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-54A
Project # 00000-000-000-0000
Lab ID: 9812G512-018
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	97.2	%	0.10
Lead, Total	4.3	mg/kg	4.2

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-54A redo
Project # 00000-000-000-0000
Lab ID: 9812G512-019
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	92.2	%	0.10
Lead, Total	20.2	mg/kg	4.2

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

RE: B2-54A redo II
Project # 00000-000-000-0000
Lab ID: 9812G512-020
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	89.0	%	0.10
Lead, Total	33.4	mg/kg	4.8

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G512

Inorganic Method Blank Data Report

Sample	Lab ID	Parameter	Result		Units	Reporting Limit
Blank 1	98GTS706-MB1	% Solids	0.10	u	%	0.10
Blank 1	98GI576-MB1	Lead, Total	5.0	u	mg/kg	5.0
Blank 1	98GI595-MB1	Lead, Total	5.0	u	mg/kg	5.0

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G512

Inorganic Precision Data Report

Sample	*Site ID*	*Parameter*	Initial *Result*	*Replicate*	*RPD*
-001REP	B2-1A redo	% Solids	85.0	85.0	0.0
-011REP	B2-47A	Lead, Total	35.9	61.2	52.2

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G512

Inorganic Accuracy Data Report

Sample	Site ID	Parameter	Spiked Sample	Initial Result	Spiked Amount	% Recov
-011	B2-47A	Lead, Total	91.4	35.9	49.4	112

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Tuesday December 29th, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G512

Inorganic Laboratory Control Standards Report

Lab ID	Parameter	Spiked Amount	Units	Spike #1 % Recov.	Spike #2 % Recov.	RPD
98GI576-LC1	Lead, LCS	50.0	mg/kg	100	96.6	3.9
98GI595-LC1	Lead, LCS	50.0	mg/kg	94.3	105	10.4

RECRA LabNet Use Only
90126512

Custody Transfer Record/Lab Work Request

RECRA LabNet

30

Client: ELM Consulting LLC
Est. Final Proj. Sampling Date: ____
Project #: 90000701
Project Contact/Phone #: Jeff Stringer (847) 847-1882
RECRA Project Manager: Jeff Sumes
QC: ____ Del: ____ TAT: 7-day
Date Rec'd: ____ Date Due: ____
Account #: ____

Refrigerator #															
#/Type Container	Liquid														
	Solid														
Volume	Liquid														
	Solid														
Preservatives															
ANALYSES REQUESTED →		ORGANIC							INORG						
		VOA	BNA	Pest/PCB	Herb				Metal	CN					

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	RECRA LabNet Use Only: Total Lead 6010
001	BZ-1a redo			Soil	12/11/98		X
002	BZ-4a redo			Soil	12/11/98		X
003	BZ-29a			Soil	12/10/98		X
004	BZ-34a			Soil	12/10/98		X
005	BZ-35a			Soil	12/10/98		X
006	BZ-36a			Soil	12/11/98		X
007	BZ-40a			Soil	12/11/98		X
008	BZ-42a			Soil	12/10/98		X
009	BZ-43a			Soil	12/10/98		X
010	BZ-46a			Soil	12/10/98		X

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1. ____
2. ____
3. ____
4. ____ (7.5, 7.6, 8.5)
5. ____
6. ____

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
J Stringer	[illegible]	12/15/98	1125				

RECRA LabNet Use Only

Samples were:
1) Shipped FX or Hand Delivered ____ Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N 90578
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Lables and COC Record? Y or N
NOTES:

Page ____ of ____

RECRA LabNet Use Only 12/15/98
9812 6573 572

Custody Transfer Record/Lab Work Request

RECRA LabNet

31

Client: ELM Consulting LLC
Est. Final Proj. Sampling Date:
Project #: 98000701
Project Contact/Phone #: Jeff Stringer (847) 842-1882
RECRA Project Manager: Jeff Janes
QC: Del: TAT: 7-day
Date Rec'd: Date Due:
Account #:

Refrigerator #:
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives:

ANALYSES REQUESTED →

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN
011	BZ-47a			Soil	12/10/98						X	
012	BZ-47a redo			Soil	12/11/98						X	
013	BZ-49a			Soil	12/10/98						X	
014	BZ-50a			Soil	12/10/98						X	
015	BZ-51a			Soil	12/10/98						X	
016	BZ-52a			Soil	12/10/98						X	
017	BZ-52a redo			Soil	12/11/98						X	
018	BZ-54a			Soil	12/10/98						X	
019	BZ-54a redo			Soil	12/10/98						X	
020	BZ-54a redo II			Soil	12/11/98						X	

RECRA LabNet Use Only

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4. (7.5, 7.6, 8.5)
5.
6.

RECRA LabNet Use Only

Samples were:
1) Shipped FX or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N 60578
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Lables and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
J Stringer	[illegible]	12/15/98	1125

Relinquished by	Received by	Date	Time

Page ___

RECRA
LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

December 29, 1998

Mr. Jeff Stringer
ELM Consulting, LLC
18-2 East Dundee Road, Suite 100
Barrington, IL 60010

RE: J-Manville
Analytical Report
Lot 9812G497

Dear Mr. Stringer:

Enclosed is the analytical report for the project and lot number listed above. If you have any questions, please contact me at 708-534-5200.

Sincerely,

Recra LabNet - Chicago

Jeffrey A. James
Project Manager

jb

Enclosures

Approved By:

Michael J. Healy
Vice President

The results presented in this report relate only to the analytical testing and conditions of sample at receipt. This report pertains to only those samples actually tested. All 32 pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

2417 Bond Street • University Park, IL 60466-3182 • (708) 534-5200 • Fax (708) 534-5211

GLOSSARY OF DATA QUALIFIERS AND ABBREVIATIONS

Data Qualifiers

B	Compound was found in the blank and the sample
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D
E	Concentration exceeds the instrument calibration range and was subsequently diluted
I	Appears on the "results spreadsheet" to indicate an interference
J	Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)
M	Summary Compound
(M)	Manually integrated compound
N	Positive ID of a TIC that is not quantitated against a standard and must be accompanied by a CAS No.
T	Compound was found in the TCLP extraction blank and the sample
u	Analyte was not detected at or above the reporting limit
X	Result obtained indirectly through calculation based on results from other analyses
Y	The chromatographic response resembles a typical fuel pattern
Z	The chromatographic response does not resemble a typical fuel pattern

Abbreviations

Batch	Designation given to identify a specific extraction, digestion or preparation set (equivalent to prep batch)
BS	Blank spike analysis was conducted on reagent grade water or a matrix free from the analyte of interest
BSD	Blank spike duplicate
BRL	Below reporting limit
CAP	Capillary Column
CD	Calculation factor used by the Laboratory's Information Management System (LIMS)
Contract	Contract laboratory identification code
DF	Dilution factor
DL	Appears in the sample ID to indicate a secondary dilution was performed
LCS LC	Denotes laboratory control standard
LAB ID	The full 12 character Recra laboratory identification number (equivalent to RFW#)
MB	Method blank or (PB) preparation blank
MS	Matrix spike
MSD	Matrix spike duplicate
NA	Not applicable
NC	Non-calculable precision due to insufficient concentration of analyte present in the sample
NR	Not required
NS	Not spiked
PACK	Packed Column
RE	Appears in the sample ID to indicate a re-analysis
REP	Replicate analysis
Reprep	Sample was reprepared and then reanalyzed
RFW#	The full 12 character Recra laboratory identification number (equivalent to LAB ID)
RFW Lot	The first 8 characters of the RFW#
RPD	Relative percent difference of duplicate (unrounded) analyses
RRF	Relative response factor
RT	Retention time
RTW	Retention time window
SP	Blank spike, blank spike duplicate, matrix spike or matrix spike duplicate
WO#	Work order no. Recra code used to define a specific client, job, phase and task

NOTES:

- One or a combination of these data qualifiers and abbreviations may appear in the analytical report.
- Soil, sediment and sludge results are reported on a dry weight basis except when analyzed for landfill disposal or incineration parameters. All other results on a solid matrix are reported on an "as received" basis unless noted differently.
- Reporting limits are adjusted for preparation sample size, sample dilutions and sample moisture content if analyzed on a dry weight basis.

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G497

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B2-1a							
% SOLIDS	001	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
% SOLIDS	001 REP	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	001	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
B2-2a							
% SOLIDS	002	S	98GTS702	12/09/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	002	S	98GI571	12/09/98	12/14/98	12/16/98	12/17/98
B2-3a							
% SOLIDS	003	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	003	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
B2-4a							
% SOLIDS	004	S	98GTS702	12/09/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	004	S	98GI571	12/09/98	12/14/98	12/16/98	12/17/98
B2-5a							
% SOLIDS	005	S	98GTS702	12/09/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	005	S	98GI571	12/09/98	12/14/98	12/16/98	12/21/98
B2-6a							
% SOLIDS	006	S	98GTS702	12/09/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	006	S	98GI571	12/09/98	12/14/98	12/16/98	12/17/98
B2-7a							
% SOLIDS	007	S	98GTS702	12/09/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	007	S	98GI571	12/09/98	12/14/98	12/16/98	12/17/98
B2-8a							
% SOLIDS	008	S	98GTS702	12/09/98	12/14/98	12/15/98	12/15/98

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G497

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
LEAD, TOTAL	008	S	98GI571	12/09/98	12/14/98	12/16/98	12/17/98
B2-9a							
% SOLIDS	009	S	98GTS702	12/09/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	009	S	98GI571	12/09/98	12/14/98	12/16/98	12/17/98
B2-10a							
% SOLIDS	010	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	010	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
B2-11a							
% SOLIDS	011	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, SERIAL DILUTIO	011 L	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
LEAD, TOTAL	011	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
LEAD, TOTAL	011 REP	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
LEAD, TOTAL	011 MS	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
B2-12a							
% SOLIDS	012	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	012	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
B2-13a							
% SOLIDS	013	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	013	S	98GI571	12/10/98	12/14/98	12/16/98	12/21/98
B2-14a							
% SOLIDS	014	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	014	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
B2-15a							
% SOLIDS	015	S	98GTS702	12/09/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	015	S	98GI571	12/09/98	12/14/98	12/16/98	12/17/98

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G497

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B2-16a							
% SOLIDS	016	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	016	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
B2-17a							
% SOLIDS	017	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	017	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
B2-18a							
% SOLIDS	018	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	018	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
B2-19a							
% SOLIDS	019	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	019	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
B2-21a							
% SOLIDS	020	S	98GTS702	12/10/98	12/14/98	12/15/98	12/15/98
LEAD, TOTAL	020	S	98GI571	12/10/98	12/14/98	12/16/98	12/17/98
LAB QC:							
LEAD LABORATORY	LC1 BS	S	98GI571	N/A	N/A	12/16/98	12/17/98
LEAD LABORATORY	LC2 BS	S	98GI571	N/A	N/A	12/16/98	12/17/98
LEAD, TOTAL	MB1	S	98GI571	N/A	N/A	12/16/98	12/17/98

SIGNATURE [signature] DATE 12/29/98

NY CERTIFICATION # 11006

Recra LabNet - Chicago
METALS CASE NARRATIVE

Client: ELM Consult - J Marville
RFW#: 9812G497

WO#: 00000-000-000-0000
Date Rec'd: 12/14/98

1. This narrative covers the analysis of 20 Soil samples for the following metal:

   ICP ..... Pb

   Method Ref: USEPA - SW 846

2. All analyses were performed within the required holding times.

3. All Initial and Continuing Calibration Verification (ICV/CCV's) were within control limits.

4. All Initial and Continuing Calibration Blanks (ICB CCB's) were within control limits.

5. All ICP Interference Check Samples (ICSA and ICSAB) were within control limits.

6. Laboratory Control Sample (LCS) recoveries were within the 80-120% control limits.

7. Method blank concentrations were less than the CRDL

8. All Serial dilution analysis were within control limits

9. Matrix Spike recovery and Duplicate analysis was performed on sample 011. The results were not within control limits.

   Matrix spike Recovery was 254.0% (control limits 75 - 125%)
   Duplicate RPD 50.8% (control limit +/- 20% RPD)

Mani S. Iyer
Metals Section Manager

12/29/98
Date

Recra LabNet - Chicago
METALS METHOD REFERENCE

The following methods are used as reference for the analysis of samples contained with this RFW Lot: 98126497

SW846	✓6010A ___6010B __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P ✓Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __Ag7761 __As7060A __Cd7131A __Cr7191 __Cu7211 __Hg7470A __Hg7471A __Pb7421 __Sb7041 __Se7740 __Tl7841 __CN 9010A __CN 9010B/9014
EPA	**200.7** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P __Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __Ag272.2 __As206.2 __Cd213.2 __Cr218.2 __Cu220.2 __Hg245.1 __Hg245.5 __Pb239.2 __Sb204.2 __Se270.2 __Tl279.2 **200.9** __As __Cd __Pb __Sb __Se __Tl
CLP ILM04.0	**200.7 CLP-M** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P __Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __As206.2 __Cd213.2 __Hg245.1 __Hg245.5 __Pb239.2 __Sb204.2 __Se270.2 __Tl279.2 __CN335.2
Digestion Method	**SW846** __3005A __3010A __3020A __3020A(+H_2O_2) ✓3050A __7060A/7740 __7470A __7471A __3050B **EPA** __200.7 __200.0(+H_2O_2) __200.9(-HCL;+H_2O_2) **USEPA/CLP** __ILM04.0 Exhibit D, Section III
Extraction Method	**SW846** __1311TCLP __1312SPLP __1320MEP Using TCLP **ASTM** **CAM Title 22** __D3987 Neutral Leach __W.E.T.
%Solids	__SM 2540G __ASTM D2216 __Exhibit D Part F

CHI-22-05-002/J-4/98

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Wednesday December 23rd, 1998

RE: **B2-1a**
Project # 00000-000-000-0000
Lab ID: **9812G497-001**
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	90.7	%	0.10
Lead, Total	116	mg/kg	4.9

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-2a
Project # 00000-000-000-0000
Lab ID: 9812G497-002
Sample Date: 12/09/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	88.6	%	0.10
Lead, Total	831	mg/kg	4.9

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-3a
Project # 00000-000-000-0000
Lab ID: 9812G497-003
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	87.5	%	0.10
Lead, Total	11.9	mg/kg	4.7

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Wednesday December 23rd, 1998

RE: **B2-4a**
Project # 00000-000-000-0000
Lab ID: **9812G497-004**
Sample Date: 12/09/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	91.3	%	0.10
Lead, Total	24.8	mg/kg	4.5

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-5a
Project # 00000-000-000-0000
Lab ID: 9812G497-005
Sample Date: 12/09/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	96.4	%	0.10
Lead, Total	26.0	mg/kg	8.0

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-6a
Project # 00000-000-000-0000
Lab ID: 9812G497-006
Sample Date: 12/09/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	85.0	%	0.10
Lead, Total	24.6	mg/kg	4.5

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-7a
Project # 00000-000-000-0000
Lab ID: 9812G497-007
Sample Date: 12/09/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	85.5	%	0.10
Lead, Total	13.7	mg/kg	4.7

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-8a
Project # 00000-000-000-0000
Lab ID: 9812G497-008
Sample Date: 12/09/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	91.2	%	0.10
Lead, Total	55.5	mg/kg	4.6

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-9a
Project # 00000-000-000-0000
Lab ID: 9812G497-009
Sample Date: 12/09/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	94.7	%	0.10
Lead, Total	63.8	mg/kg	4.1

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-10a
Project # 00000-000-000-0000
Lab ID: 9812G497-010
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	85.7	%	0.10
Lead, Total	15.2	mg/kg	4.6

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-11a
Project # 00000-000-000-0000
Lab ID: 9812G497-011
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	87.4	%	0.10
Lead, Total	18.0	mg/kg	4.8

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-12a
Project # 00000-000-000-0000
Lab ID: 9812G497-012
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	88.7	%	0.10
Lead, Total	74.6	mg/kg	4.7

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Wednesday December 23rd, 1998

RE: **B2-13a**
Project # 00000-000-000-0000
Lab ID: **9812G497-013**
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	96.5	%	0.10
Lead, Total	37.3	mg/kg	8.2

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Wednesday December 23rd, 1998

RE: **B2-14a**
Project # 00000-000-000-0000
Lab ID: **9812G497-014**
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	88.8	%	0.10
Lead, Total	47.1	mg/kg	4.5

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-15a
Project # 00000-000-000-0000
Lab ID: 9812G497-015
Sample Date: 12/09/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	86.0	%	0.10
Lead, Total	109	mg/kg	4.5

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-16a
Project # 00000-000-000-0000
Lab ID: 9812G497-016
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	90.3	%	0.10
Lead, Total	149	mg/kg	4.4

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: **Wednesday December 23rd, 1998**

RE: **B2-17a**
Project **# 00000-000-000-0000**
Lab ID: **9812G497-017**
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	95.6	%	0.10
Lead, Total	49.7	mg/kg	4.4

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-18a
Project # 00000-000-000-0000
Lab ID: 9812G497-018
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	84.8	%	0.10
Lead, Total	14.5	mg/kg	5.0

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-19a
Project # 00000-000-000-0000
Lab ID: 9812G497-019
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	85.4	%	0.10
Lead, Total	16.1	mg/kg	4.5

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

RE: B2-21a
Project # 00000-000-000-0000
Lab ID: 9812G497-020
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	95.2	%	0.10
Lead, Total	29.8	mg/kg	4.0

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Wednesday **December** 23rd, 1998

Project # 00000-000-000-0000
Lab Batch: **9812G497**

Inorganic Method Blank Data Report

Sample	Lab ID	Parameter	Result		Units	Reporting Limit
Blank 1	98GTS702-MB1	% Solids	0.10	u	%	0.10
Blank 1	98GI571-MB1	Lead, Total	5.0	u	mg/kg	5.0

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G497

Inorganic Precision Data Report

Sample	Site ID	Parameter	Initial Result	Replicate	RPD
-001REP	B2-1a	% Solids	90.7	90.6	0.10
-011REP	B2-11a	Lead, Total	18.0	30.2	50.8

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Wednesday December 23rd, 1998

Project # 00000-000-000-0000
Lab Batch: **9812G497**

Inorganic Accuracy Data Report

Sample	Site ID	Parameter	Spiked Sample	Initial Result	Spiked Amount	% Recov
-011	B2-11a	Lead, Total	139	18.0	47.7	25

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Wednesday December 23rd, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G497

Inorganic Laboratory Control Standards Report

Lab ID	Parameter	Spiked Amount	Units	Spike #1 % Recov.	Spike #2 % Recov.	RPD
98GI571-LC1	Lead, LCS	50.0	mg/kg	97.6	97.9	0.29

RECRA LabNet Use Only

9812G497

Custody Transfer Record/Lab Work Request

RECRA LabNet

31

Client: ELM Consulting, L.L.C.
Est. Final Proj. Sampling Date:
Project #: 98000701
Project Contact/Phone #: Jeff Stringer (847) 812-1882
RECRA Project Manager: Jeff Stringer James
QC: Del: TAT: 7-day
Date Rec'd: Date Due:
Account #:

Refrigerator #																	
#/Type Container	Liquid																
	Solid																
Volume	Liquid																
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
		RECRA LabNet Use Only															
									Total Lead 6010								

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Total Lead 6010
001	B2-1a			Soil	12/10/98		X
002	B2-2a			Soil	12/9/98		X
003	B2-3a			Soil	12/10/98		X
004	B2-4a			Soil	12/9/98		X
005	B2-5a			Soil	12/9/98		X
006	B2-6a			Soil	12/9/98		X
007	B2-7a			Soil	12/9/98		X
008	B2-8a			Soil	12/9/98		X
009	B2-9a			Soil	12/9/98		X
010	B2-10a			Soil	12/10/98		X

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were:
1) Shipped FX or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Lables and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[signature]	[signature]	12/10/98	1035

Relinquished by	Received by	Date	Time

RECRA LabNet Use Only

98126497

Custody Transfer Record/Lab Work Request

RECRA LabNet

Client SLM Consulting, LLC
Est. Final Proj. Sampling Date
Project # 98000701
Project Contact/Phone # Jeff Stringer (847) 842-1882
RECRA Project Manager Jeff James
QC ____ Del ____ TAT 7-day
Date Rec'd ____ Date Due ____
Account # ____

Refrigerator #		
#/Type Container	Liquid	
	Solid	
Volume	Liquid	
	Solid	
Preservatives		

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

RECRA LabNet Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Total Lead 6010
011	B2-11a			Soil	12/10/98		X
012	B2-12a			Soil	12/10/98		X
013	B2-13a			Soil	12/10/98		X
014	B2-14a			Soil	12/10/98		X
015	B2-15a			Soil	12/9/98		X
016	B2-16a			Soil	12/10/98		X
017	B2-17a			Soil	12/10/98		X
018	B2-18a			Soil	12/10/98		X
019	B2-19a			Soil	12/10/98		X
020	B2-21a			Soil	12/10/98		X

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were:
1) Shipped Y or
Hand Delivered ____
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Lables and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
J Stringer	K Schultz	12/14/98	1035

Relinquished by	Received by	Date	Time

RECRA
LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

December 28, 1998

Mr. Jeff Stringer
ELM Consulting
18-2 E. Dundee Rd. Ste. 100
Barrington, IL 60010

RE: J Manville
Lot 9812G513

Dear Mr. Stringer:

The enclosed analytical report is for the project and lot number listed above. If you have any questions, please contact me at 708-534-5200.

Sincerely,

Recra LabNet - Chicago

Jeffrey A. James
Project Manager

pmb

Enclosures

Approved By:

for Michael J. Healy
Vice President

The results presented in this report relate only to the analytical testing and conditions of sample at receipt. This report pertains to only those samples actually tested. All 29 pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

2417 Bond Street • University Park, IL 60466-3182 • (708) 534-5200 • Fax (708) 534-5211

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G513

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B2-56A							
% SOLIDS	001	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
% SOLIDS	001 REP	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD, TOTAL	001	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98
B2-61A							
% SOLIDS	002	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD, TOTAL	002	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98
B2-59A							
% SOLIDS	003	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD, TOTAL	003	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98
B2-62A							
% SOLIDS	004	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD, TOTAL	004	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98
B2-63A							
% SOLIDS	005	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD, TOTAL	005	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98
B2-64A							
% SOLIDS	006	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD, TOTAL	006	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98
B2-69A							
% SOLIDS	007	S	98GTS707	12/10/98	12/15/98	12/17/98	12/17/98
LEAD, TOTAL	007	S	98GI589	12/10/98	12/15/98	12/21/98	12/22/98
B2-69A redo							
% SOLIDS	008	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G513

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
LEAD. TOTAL	008	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98
B2-70A							
% SOLIDS	009	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD. TOTAL	009	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98
B2-71A							
% SOLIDS	010	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD. TOTAL	010	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98
B2-72A							
% SOLIDS	011	S	98GTS707	12/10/98	12/15/98	12/17/98	12/17/98
LEAD. SERIAL DILUTIO	011 L	S	98GI589	12/10/98	12/15/98	12/21/98	12/23/98
LEAD. TOTAL	011	S	98GI589	12/10/98	12/15/98	12/21/98	12/23/98
LEAD. TOTAL	011 REP	S	98GI589	12/10/98	12/15/98	12/21/98	12/23/98
LEAD. TOTAL	011 MS	S	98GI589	12/10/98	12/15/98	12/21/98	12/23/98
B2-75A							
% SOLIDS	012	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD. TOTAL	012	S	98GI589	12/11/98	12/15/98	12/21/98	12/23/98
B2-76A							
% SOLIDS	013	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD. TOTAL	013	S	98GI589	12/11/98	12/15/98	12/21/98	12/23/98
B2-77A							
% SOLIDS	014	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD. TOTAL	014	S	98GI589	12/11/98	12/15/98	12/21/98	12/23/98
B2-78A							
% SOLIDS	015	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD. TOTAL	015	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G513

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B2-79A							
% SOLIDS	016	S	98GTS707	12/11/98	12/15/98	12/17/98	12/17/98
LEAD, TOTAL	016	S	98GI589	12/11/98	12/15/98	12/21/98	12/22/98
B2-80A							
% SOLIDS	017	S	98GTS707	12/14/98	12/15/98	12/17/98	12/17/98
LEAD, TOTAL	017	S	98GI589	12/14/98	12/15/98	12/21/98	12/22/98
B2-81A							
% SOLIDS	018	S	98GTS707	12/14/98	12/15/98	12/17/98	12/17/98
LEAD, TOTAL	018	S	98GI589	12/14/98	12/15/98	12/21/98	12/22/98
LAB QC:							
LEAD LABORATORY	LC1 BS	S	98GI589	N/A	N/A	12/21/98	12/22/98
LEAD LABORATORY	LC2 BS	S	98GI589	N/A	N/A	12/21/98	12/23/98
LEAD, TOTAL	MB1	S	98GI589	N/A	N/A	12/21/98	12/23/98

SIGNATURE [illegible] DATE 12/28/98

NY CERTIFICATION # 11006

GLOSSARY OF DATA QUALIFIERS AND ABBREVIATIONS

Data Qualifiers

B	Compound was found in the blank and the sample
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D
E	Concentration exceeds the instrument calibration range and was subsequently diluted
I	Appears on the "results spreadsheet" to indicate an interference
J	Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)
M	Summary Compound
(M)	Manually integrated compound
N	Positive ID of a TIC that is not quantitated against a standard and must be accompanied by a CAS No.
T	Compound was found in the TCLP extraction blank and the sample
u	Analyte was not detected at or above the reporting limit
X	Result obtained indirectly through calculation based on results from other analyses
Y	The chromatographic response resembles a typical fuel pattern
Z	The chromatographic response does not resemble a typical fuel pattern

Abbreviations

Batch	Designation given to identify a specific extraction, digestion or preparation set (equivalent to prep batch)
BS	Blank spike analysis was conducted on reagent grade water or a matrix free from the analyte of interest
BSD	Blank spike duplicate
BRL	Below reporting limit
CAP	Capillary Column
CD	Calculation factor used by the Laboratory's Information Management System (LIMS)
Contract	Contract laboratory identification code
DF	Dilution factor
DL	Appears in the sample ID to indicate a secondary dilution was performed
LCS/LC	Denotes laboratory control standard
LAB ID	The full 12 character Recra laboratory identification number (equivalent to RFW#)
MB	Method blank or (PB) preparation blank
MS	Matrix spike
MSD	Matrix spike duplicate
NA	Not applicable
NC	Non-calculable precision due to insufficient concentration of analyte present in the sample
NR	Not required
NS	Not spiked
PACK	Packed Column
RE	Appears in the sample ID to indicate a re-analysis
REP	Replicate analysis
Reprep	Sample was reprepared and then reanalyzed
RFW#	The full 12 character Recra laboratory identification number (equivalent to LAB ID)
RFW Lot	The first 8 characters of the RFW#
RPD	Relative percent difference of duplicate (unrounded) analyses
RRF	Relative response factor
RT	Retention time
RTW	Retention time window
SP	Blank spike, blank spike duplicate, matrix spike or matrix spike duplicate
WO#	Work order no Recra code used to define a specific client, job, phase and task

NOTES:

- One or a combination of these data qualifiers and abbreviations may appear in the analytical report.
- Soil, sediment and sludge results are reported on a dry weight basis except when analyzed for landfill disposal or incineration parameters All other results on a solid matrix are reported on an "as received" basis unless noted differently.
- Reporting limits are adjusted for preparation sample size, sample dilutions and sample moisture content if analyzed on a dry weight basis

Recra LabNet - Chicago
METALS METHOD REFERENCE

The following methods are used as reference for the analysis of samples contained with this RFW Lot: 98126513

SW846	✓ 6010A __6010B __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P ✓Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __Ag7761 __As7060A __Cd7131A __Cr7191 __Cu7211 __Hg7470A __Hg7471A __Pb7421 __Sb7041 __Se7740 __Tl7841 __CN 9010A __CN 9010B/9014
EPA	**200.7** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P __Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __Ag272.2 __As206.2 __Cd213.2 __Cr218.2 __Cu220.2 __Hg245.1 __Hg245.5 __Pb239.2 __Sb204.2 __Se270.2 __Tl279.2 **200.9** __As __Cd __Pb __Sb __Se __Tl
CLP **ILM04.0**	**200.7 CLP-M** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P __Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __As206.2 __Cd213.2 __Hg245.1 __Hg245.5 __Pb239.2 __Sb204.2 __Se270.2 __Tl279.2 __CN335.2
Digestion Method	**SW846** __3005A __3010A __3020A __3020A(+H_2O_2) ✓3050A __7060A/7740 __7470A __7471A __3050B **EPA** __200.7 __200.0(+H_2O_2) __200.9(-HCL;+H_2O_2) **USEPA/CLP** __ILM04.0 Exhibit D, Section III
Extraction Method	**SW846** __1311TCLP __1312SPLP __1320MEP Using TCLP **ASTM** __D3987 Neutral Leach **CAM Title 22** __W.E.T.
%Solids	__SM 2540G __ASTM D2216 __Exhibit D Part F

CHI-22-05-002/J-4/98

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-56A
Project # 00000-000-000-0000
Lab ID: 9812G513-001
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	97.0		%	0.10
Lead, Total	4.5	u	mg/kg	4.5

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Monday December 28th, 1998

RE: **B2-61A**
Project # 00000-000-000-0000
Lab ID: **9812G513-002**
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	97.6		%	0.10
Lead, Total	4.2	u	mg/kg	4.2

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-59A
Project # 00000-000-000-0000
Lab ID: 9812G513-003
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	97.0	%	0.10
Lead, Total	5.3	mg/kg	4.0

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-62A
Project # 00000-000-000-0000
Lab ID: 9812G513-004
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	96.7		%	0.10
Lead, Total	4.3	u	mg/kg	4.3

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-63A
Project # 00000-000-000-0000
Lab ID: 9812G513-005
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	96.2		%	0.10
Lead, Total	4.3	u	mg/kg	4.3

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-64A
Project # 00000-000-000-0000
Lab ID: 9812G513-006
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	90.7		%	0.10
Lead, Total	4.4	u	mg/kg	4.4

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-69A
Project # 00000-000-000-0000
Lab ID: 9812G513-007
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	97.1		%	0.10
Lead, Total	4.0	u	mg/kg	4.0

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-69A redo
Project # 00000-000-000-0000
Lab ID: 9812G513-008
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	97.0		%	0.10
Lead, Total	4.6	u	mg/kg	4.6

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-70A
Project # 00000-000-000-0000
Lab ID: 9812G513-009
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	98.1		%	0.10
Lead, Total	3.9	u	mg/kg	3.9

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-71A
Project # 00000-000-000-0000
Lab ID: 9812G513-010
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	86.5		%	0.10
Lead, Total	4.9	u	mg/kg	4.9

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-72A
Project # 00000-000-000-0000
Lab ID: 9812G513-011
Sample Date: 12/10/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	93.7		%	0.10
Lead, Total	4.7	u	mg/kg	4.7

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-75A
Project # 00000-000-000-0000
Lab ID: 9812G513-012
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	95.6	%	0.10
Lead, Total	25.1	mg/kg	4.1

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-76A
Project # 00000-000-000-0000
Lab ID: 9812G513-013
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	94.6	%	0.10
Lead, Total	16.4	mg/kg	4.7

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-77A
Project # 00000-000-000-0000
Lab ID: 9812G513-014
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	90.2	%	0.10
Lead, Total	44.0	mg/kg	8.7

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-78A
Project # 00000-000-000-0000
Lab ID: 9812G513-015
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	86.3		%	0.10
Lead, Total	4.6	u	mg/kg	4.6

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-79A
Project # 00000-000-000-0000
Lab ID: 9812G513-016
Sample Date: 12/11/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result		Units	Reporting Limit
% Solids	94.9		%	0.10
Lead, Total	4.4	u	mg/kg	4.4

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-80A
Project # 00000-000-000-0000
Lab ID: 9812G513-017
Sample Date: 12/14/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	88.4	%	0.10
Lead, Total	8.2	mg/kg	4.6

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

RE: B2-81A
Project # 00000-000-000-0000
Lab ID: 9812G513-018
Sample Date: 12/14/98
Date Received: 12/15/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	82.3	%	0.10
Lead, Total	62.5	mg/kg	4.9

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G513

Inorganic Method Blank Data Report

Sample	Lab ID	Parameter	Result		Units	Reporting Limit
Blank 1	98GTS707-MB1	% Solids	0.10	u	%	0.10
Blank 1	98GI589-MB1	Lead, Total	5.0	u	mg/kg	5.0

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G513

Inorganic Precision Data Report

Sample	Site ID	Parameter	Initial Result		Replicate		RPD
-001REP	B2-56A	% Solids	97.0		97.3		0.30
-011REP	B2-72A	Lead, Total	4.7	u	4.5	u	NC

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Monday December 28th, 1998

Project # 00000-000-000-0000
Lab Batch: **9812G513**

Inorganic Accuracy Data Report

Sample	Site ID	Parameter	Spiked Sample	Initial Result		Spiked Amount	% Recov
-011	B2-72A	Lead, Total	41.1	4.7	u	42.0	9

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Monday December 28th, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G513

Inorganic Laboratory Control Standards Report

Lab ID	Parameter	Spiked Amount	Units	Spike #1 % Recov.	Spike #2 % Recov.	RPD
98GI589-LC1	Lead, LCS	50.0	mg/kg	90.7	92.8	2.3

RECRA LabNet Use Only
98126513

Custody Transfer Record/Lab Work Request

RECRA LabNet

28

Client: ELM Consulting LLC
Est. Final Proj. Sampling Date: _____
Project #: 98000701
Project Contact/Phone #: Jeff Stringer 847-842-1882
RECRA Project Manager: Jeff James
QC _____ Del _____ TAT 7 day
Date Rec'd _____ Date Due _____
Account # _____

Refrigerator #		
#/Type Container	Liquid	
	Solid	
Volume	Liquid	
	Solid	
Preservatives		

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

RECRA LabNet Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Total Lead 6010
001	BZ-56a			Soil	12/11/98		X
002	BZ-61a			Soil	12/11/98		X
003	BZ-59a			Soil	12/11/98		X
004	BZ-62a			Soil	12/11/98		X
005	BZ-63a			Soil	12/11/98		X
006	BZ-64a			Soil	12/11/98		X
007	BZ-69a			Soil	12/10/98		X
008	BZ-69a redo			Soil	12/11/98		X
009	BZ-70a			Soil	12/11/98		X
010	BZ-71a			Soil	12/11/98		X

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1. _____
2. _____
3. _____
4. _____ (7.5, 7.6, 8.5°)
5. _____
6. _____

Relinquished by	Received by	Date	Time
J Stringer	[illegible]	12/15/98	1125

Relinquished by	Received by	Date	Time

*Discrepancies Between Samples Lables and COC Record? Y or N
NOTES:

RECRA LabNet Use Only

Samples were:
1) Shipped ☒ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N 60578
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Page ___ of ___

RECRA LabNet Use Only

90126573

Custody Transfer Record/Lab Work Request

RECRA LabNet

29

Client: ELM Consulting
Est. Final Proj. Sampling Date:
Project #: 98000701
Project Contact/Phone #: Jeff Stringer 847 842-1882
RECRA Project Manager: Jeff James
QC: Del: TAT: 7 day
Date Rec'd: Date Due:
Account #:

Refrigerator #:
#/Type Container: Liquid / Solid
Volume: Liquid / Solid
Preservatives:

ANALYSES REQUESTED →

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN
011	B2-72a			Soil	12/10/98						X	
012	B2-75a			Soil	12/11/98						X	
013	B2-76a			Soil	12/11/98						X	
014	B2-77a			Soil	12/11/98						X	
015	B2-78a			Soil	12/11/98						X	
016	B2-79a			Soil	12/11/98						X	
017	B2-80a			Soil	12/14/98						X	
018	B2-81a			Soil	12/14/98						X	

RECRA LabNet Use Only

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4. (7.5, 7.6, 8.5°)
5.
6.

RECRA LabNet Use Only

Samples were:
1) Shipped FX or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N 60578
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Lables and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
J Stringer	K Schulz	12/15/98	1125

Relinquished by	Received by	Date	Time

Page ___

RECRA
LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

December 28, 1998

Mr. Jeff Stringer
ELM Consulting
18-2 E. Dundee Rd. Ste. 100
Barrington, IL 60010

RE: J Manville
Lot 9812G498

Dear Mr. Stringer:

The enclosed analytical report is for the project and lot number listed above. If you have any questions, please contact me at 708-534-5200.

Sincerely,

Recra LabNet - Chicago

Jeffrey A. James
Project Manager

pmb

Enclosures

Approved By:

Michael J. Healy
Vice President

The results presented in this report relate only to the analytical testing and conditions of sample at receipt. This report pertains to only those samples actually tested. All 22 pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

2417 Bond Street • University Park, IL 60466-3182 • (708) 534-5200 • Fax (708) 534-5211

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G498

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B2-22a							
% SOLIDS	001	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
% SOLIDS	001 REP	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, SERIAL DILUTIO	001 L	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
LEAD, TOTAL	001	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
LEAD, TOTAL	001 REP	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
LEAD, TOTAL	001 MS	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
B2-23a							
% SOLIDS	002	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	002	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
B2-25a							
% SOLIDS	003	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	003	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
B2-26a							
% SOLIDS	004	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	004	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
B2-27a							
% SOLIDS	005	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	005	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
B2-30a							
% SOLIDS	006	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	006	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
B2-31a							
% SOLIDS	007	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	007	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98

Recra LabNet - Chicago
INORGANIC ANALYTICAL DATA PACKAGE FOR
ELM Consult-J Manville

LABORATORY CHRONICLE

LOT # :9812G498

CLIENT ID /ANALYSIS	Sample #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
B2-33a							
% SOLIDS	008	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	008	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
B2-37a							
% SOLIDS	009	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	009	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
B2-38a							
% SOLIDS	010	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	010	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
B2-41a							
% SOLIDS	011	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	011	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98
B2-45a							
% SOLIDS	012	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	012	S	98GI574	12/10/98	12/14/98	12/16/98	12/22/98
B2-53a							
% SOLIDS	013	S	98GTS705	12/10/98	12/14/98	12/16/98	12/16/98
LEAD, TOTAL	013	S	98GI574	12/10/98	12/14/98	12/16/98	12/21/98

LAB QC:

LEAD LABORATORY	LC1 BS	S	98GI574	N/A	N/A	12/16/98	12/21/98
LEAD LABORATORY	LC2 BS	S	98GI574	N/A	N/A	12/16/98	12/21/98
LEAD, TOTAL	MB1	S	98GI574	N/A	N/A	12/16/98	12/21/98

SIGNATURE [signature] DATE 12/28/98

NY CERTIFICATION # 11006

GLOSSARY OF DATA QUALIFIERS AND ABBREVIATIONS

Data Qualifiers

B	Compound was found in the blank and the sample
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D
E	Concentration exceeds the instrument calibration range and was subsequently diluted
I	Appears on the "results spreadsheet" to indicate an interference
J	Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)
M	Summary Compound
(M)	Manually integrated compound
N	Positive ID of a TIC that is not quantitated against a standard and must be accompanied by a CAS No.
T	Compound was found in the TCLP extraction blank and the sample
u	Analyte was not detected at or above the reporting limit
X	Result obtained indirectly through calculation based on results from other analyses
Y	The chromatographic response resembles a typical fuel pattern
Z	The chromatographic response does not resemble a typical fuel pattern

Abbreviations

Batch	Designation given to identify a specific extraction, digestion or preparation set (equivalent to prep batch)
BS	Blank spike analysis was conducted on reagent grade water or a matrix free from the analyte of interest
BSD	Blank spike duplicate
BRL	Below reporting limit
CAP	Capillary Column
CD	Calculation factor used by the Laboratory's Information Management System (LIMS)
Contract	Contract laboratory identification code
DF	Dilution factor
DL	Appears in the sample ID to indicate a secondary dilution was performed
LCS/LC	Denotes laboratory control standard
LAB ID	The full 12 character Recra laboratory identification number (equivalent to RFW#)
MB	Method blank or (PB) preparation blank
MS	Matrix spike
MSD	Matrix spike duplicate
NA	Not applicable
NC	Non-calculable precision due to insufficient concentration of analyte present in the sample
NR	Not required
NS	Not spiked
PACK	Packed Column
RE	Appears in the sample ID to indicate a re-analysis
REP	Replicate analysis
Reprep	Sample was reprepared and then reanalyzed
RFW#	The full 12 character Recra laboratory identification number (equivalent to LAB ID)
RFW Lot	The first 8 characters of the RFW#
RPD	Relative percent difference of duplicate (unrounded) analyses
RRF	Relative response factor
RT	Retention time
RTW	Retention time window
SP	Blank spike, blank spike duplicate, matrix spike or matrix spike duplicate
WO#	Work order no. Recra code used to define a specific client, job, phase and task

NOTES:

- One or a combination of these data qualifiers and abbreviations may appear in the analytical report.
- Soil, sediment and sludge results are reported on a dry weight basis except when analyzed for landfill disposal or incineration parameters. All other results on a solid matrix are reported on an "as received" basis unless noted differently.
- Reporting limits are adjusted for preparation sample size, sample dilutions and sample moisture content if analyzed on a dry weight basis.

Recra LabNet - Chicago
METALS METHOD REFERENCE

The following methods are used as reference for the analysis of samples contained with this RFW Lot: 9812498

SW846	**__6010A** **___6010B** __Ag __Al __As __B __Ba __Be ✓__Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P ✓__Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __Ag7761 __As7060A __Cd7131A __Cr7191 __Cu7211 __Hg7470A __Hg7471A __Pb7421 __Sb7041 __Se7740 __Tl7841 __CN 9010A __CN 9010B/9014
EPA	**200.7** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P __Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __Ag272.2 __As206.2 __Cd213.2 __Cr218.2 __Cu220.2 __Hg245.1 __Hg245.5 __Pb239.2 __Sb204.2 __Se270.2 __Tl279.2 **200.9** __As __Cd __Pb __Sb __Se __Tl
CLP **ILM04.0**	**200.7 CLP-M** __Ag __Al __As __B __Ba __Be __Ca __Cd __Co __Cr __Cu __Fe __K __Li __Mg __Mn __Mo __Na __Ni __P __Pb __Sb __Se __Si __Sn __Sr __Ti __Tl __V __Zn __As206.2 __Cd213.2 __Hg245.1 __Hg245.5 __Pb239.2 __Sb204.2 __Se270.2 __Tl279.2 __CN335.2
Digestion Method	**SW846** __3005A __3010A __3020A __3020A(+H_2O_2) ✓__3050A __7060A/7740 __7470A __7471A __3050B **EPA** __200.7 __200.0(+H_2O_2) __200.9(-HCL;+H_2O_2) **USEPA/CLP** __ILM04.0 Exhibit D, Section III
Extraction Method	**SW846** __1311TCLP __1312SPLP __1320MEP Using TCLP **ASTM** **CAM Title 22** __D3987 Neutral Leach __W.E.T.
%Solids	__SM 2540G __ASTM D2216 __Exhibit D Part F

CHI-22-05-002/J-4/98

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

RE: B2-22a
Project # 00000-000-000-0000
Lab ID: 9812G498-001
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	95.8	%	0.10
Lead, Total	11.1	mg/kg	4.2

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

RE: B2-23a
Project # 00000-000-000-0000
Lab ID: 9812G498-002
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	85.9	%	0.10
Lead, Total	98.1	mg/kg	4.8

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

RE: B2-25a
Project # 00000-000-000-0000
Lab ID: 9812G498-003
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	94.0	%	0.10
Lead, Total	20.3	mg/kg	4.4

To: ELM Consult-J Manville

18-2 East Dundee Road. Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

RE: B2-26a
Project # 00000-000-000-0000
Lab ID: 9812G498-004
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	84.4	%	0.10
Lead, Total	56.2	mg/kg	4.6

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

RE: B2-27a
Project # 00000-000-000-0000
Lab ID: 9812G498-005
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	78.1	%	0.10
Lead, Total	55.8	mg/kg	5.0

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

RE: B2-30a
Project # 00000-000-000-0000
Lab ID: 9812G498-006
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	83.8	%	0.10
Lead, Total	36.0	mg/kg	4.9

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Thursday December 24th, 1998

RE: **B2-31a**
Project # 00000-000-000-0000
Lab ID: **9812G498-007**
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	84.9	%	0.10
Lead, Total	14.1	mg/kg	4.6

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Thursday **December** 24th, 1998

RE: B2-33a
Project # 00000-000-000-0000
Lab ID: **9812G498-008**
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	95.4	%	0.10
Lead, Total	11.5	mg/kg	4.3

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Thursday December 24th, 1998

RE: **B2-37a**
Project # 00000-000-000-0000
Lab ID: **9812G498-009**
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	94.2	%	0.10
Lead, Total	16.8	mg/kg	4.3

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

RE: B2-38a
Project # 00000-000-000-0000
Lab ID: 9812G498-010
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	83.7	%	0.10
Lead, Total	14.1	mg/kg	4.7

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

RE: B2-41a
Project # 00000-000-000-0000
Lab ID: 9812G498-011
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	95.0	%	0.10
Lead, Total	11.0	mg/kg	4.0

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

RE: B2-45a
Project # 00000-000-000-0000
Lab ID: 9812G498-012
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	88.5	%	0.10
Lead, Total	14.2	mg/kg	8.8

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Thursday December 24th, 1998

RE: **B2-53a**
Project # 00000-000-000-0000
Lab ID: **9812G498-013**
Sample Date: 12/10/98
Date Received: 12/14/98

Metals Data Report

Parameters	Result	Units	Reporting Limit
% Solids	89.5	%	0.10
Lead, Total	29.2	mg/kg	4.3

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G498

Inorganic Method Blank Data Report

Sample	Lab ID	Parameter	Result		Units	Reporting Limit
Blank 1	98GTS705-MB1	% Solids	0.10	u	%	0.10

To: ELM Consult-J Manville

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: Mr. Jeff Stringer

Date: Thursday December 24th, 1998

Project # 00000-000-000-0000
Lab Batch: 9812G498

Inorganic Precision Data Report

Sample	Site ID	Parameter	Initial Result	Replicate	RPD
-001REP	B2-22a	% Solids	95.8	95.7	0.10
		Lead, Total	11.1	13.3	18.0

To: **ELM Consult-J Manville**

18-2 East Dundee Road, Ste 100
Barrington, IL 60010

Attn: **Mr. Jeff Stringer**

Date: Thursday **December** 24th, 1998

Project **#** 00000-000-000-0000
Lab Batch: **9812G498**

Inorganic Accuracy Data Report

Sample	Site ID	Parameter	Spiked Sample	Initial Result	Spiked Amount	% Recov
-001	B2-22a	Lead, Total	50.0	11.1	42.8	9

RECRA LabNet Use Only
98126498

Custody Transfer Record/Lab Work Request

RECRA LabNet

21

Client: ELM Consulting
Est. Final Proj. Sampling Date:
Project #: 98000701
Project Contact/Phone #: Jeff Stringer 847 842 1882
RECRA Project Manager: Jeff James
QC: Del: TAT: 7-day
Date Rec'd: Date Due:
Account #:

Refrigerator #		
#/Type Container	Liquid	
	Solid	
Volume	Liquid	
	Solid	
Preservatives		

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

RECRA LabNet Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Total Lead 6010
001	B2-22a			Soil	12/10/98		X
002	B2-23a			Soil	12/10/98		X
003	B2-25a			Soil	12/10/98		X
004	B2-26a			Soil	12/10/98		X
005	B2-27a			Soil	12/10/98		X
006	B2-30a			Soil	12/10/98		X
007	B2-31a			Soil	12/10/98		X
008	B2-33a			Soil	12/10/98		X
009	B2-37a			Soil	12/10/98		X
010	B2-38a			Soil	12/10/98		X

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	K. Schultz	12/14/98	1035

Relinquished by	Received by	Date	Time

RECRA LabNet Use Only

Samples were:
1) Shipped Y or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Lables and COC Record? Y or N
NOTES:

RECRA LabNet Use Only
9812 6498

Custody Transfer Record/Lab Work Request

RECRA LabNet

22

Client ELM Consulting LLC
Est. Final Proj. Sampling Date
Project # 98000701
Project Contact/Phone # Jeff Stringer 847 842-1882
RECRA Project Manager Jeff James
QC ____ Del ____ TAT 7-day
Date Rec'd ____ Date Due ____
Account # ____

Refrigerator #		
#/Type Container	Liquid	
	Solid	
Volume	Liquid	
	Solid	
Preservatives		

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

RECRA LabNet Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Total Lead 6010
011	B2-41a			Soil	12/10/98		X
012	B2-45a			Soil	12/10/98		X
013	B2-53a			Soil	12/10/98		X

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4
5.
6.

RECRA LabNet Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Lables and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
J Stringer	[illegible]	12/14/98	1035

Relinquished by	Received by	Date	Time

DRAFT

Appendix J

Threatened and Endangered Plant Species Summary Report for Site 2 and Site 3

Margo Milde
1206 Raleigh Road
Glenview, IL 60025
September 9, 1999

Mr. Jeff Stringer
c/o ELM
18-2E Dundee St
Ste 100
Barrington, IL 60010

Re: Illinois Threatened and Endangered Plants - Site 2 and Site 3

Dear Mr. Stringer:

This report serves to confirm my findings for our visits of August 2 and August 5, 1999, to Site 2 and Site 3, associated with the former John Mansville manufacturing facility in Waukegan, IL. I located three State-listed species for the Site: Ammophila breviligulata (Marram Grass), Chamaesyce (Euphorbia) polygonifolia (Seaside Spurge), and Cakile edentula (Sea Rocket). The first two are currently Illinois State Endangered, while the third is Illinois State Threatened.

No State-listed species were found inside the large fenced-in area of Site 2. This area is highly disturbed mesic prairie with several small disturbed pannes. Indicator species of the disturbed prairie include Solidago (Euthamia) graminifolia var nuttallii (Hairy Grass-leaved Goldenrod), Solidago juncea (Early Goldenrod), Asclepias verticillata (Whorled Milkweed), and Allium cernuum (Nodding Wild Onion). In the pannes, I found Juncus torreyi (Torrey's Rush), Eleocharis erythropoda (Red-rooted Spikerush), and Scirpus validus var creber (Great Bulrush.) The highly ruderal area bordering the parking area contained, among others, Equisetum arvense (Horsetail), Eragrostis capillaris (Lace Grass), and Echinochloa crusgallii (Barnyard Grass.)

At Site 2, Fishing Pier, I located Ammophila breviligulata (Marram Grass) on the stabilized foredunes. Site 2 Fishing Pier is characterized by disturbed beach habitat, along with disturbed stabilized beach foredunes and a small section of shrubby fencerow habitat. Indicator species for the beach at Site 2, Fishing Pier, include Juncus balticus (Baltic Rush), Juncus brachycephalus (Short-headed Rush), Cyperus rivularis (Brook Nut Sedge), and Potentilla anserina (Silverweed.) For the stabilized foredunes I found Elymus

canadensis (Canada Rye), Smilacena stellata (Starry False Solomon's Seal), Panicum virgatum (Switch Grass), and Salix glaucophylloides (Blue-leaved Willow). Fencerow vegetation included Cornus stolonifera (Red Osier Dogwood), and Parthenocissus inserta (Thicket Creeper.)

Site 2, Beach Front, contained three State-listed species: Ammophila breviligulata (Marram Grass), Chamaesyce polygonifolia (Seaside Spurge), and Cakile edentula (Sea Rocket). Site 2, Beach Front, also contained three habitats: sand beach, stabilized foredunes, and pannes. Indicator species of the sand beach, besides the Cakile edentula and Chamaesyce polygonifolia, included Cycloloma atriplicifolium (Winged Pigweed), Corispermum hyssopfolium (Bugseed), and Triplasis purpurea (Sand Grass.) The stabilized foredunes, contained, in addition to the Ammophila breviligulata, Calamolvilfa longifolia (Sand Reed Grass, Panicum virgatum (Switch Grass), Artemisia caudata (Beach Wormwood), and Solidago nemoralis (Old Field Goldenrod.) At the pannes, I found Potamogeton pectinatus (Sago Pondweed), Scirpus pungens (Chairmaker's Rush), Eleocharis acicularis (Needle Spikerush), Ceratophyllum demersum (Coontail), and Salix eriocephala (Heart-leaved Willow.)

Site 3, while not containing any State-listed species, proved to be vegetationally the most diverse. Sedge meadow, wet prairie, and mesic prairie are all found there. Sedge meadow species included Carex pellita (Woolly Sedge), Calamagrostis canadensis (Blue-joint Grass), and Eleocharis elliptica (Golden-seeded Spike Rush.) Indicator species for the mesic sand prairie include Andropogon gerardii (Big Bluestem Grass), Liatris aspera (Rough Blazing Star), Tradescantia ohioensis (Common Spiderwort), and Sorghastrum nutans (Indian Grass). Moister areas of wet sand prairie contained Potentilla fruticosa (Shrubby Cinquefoil), Spartina pectinata (Prairie Cord Grass), and Liatris spicata (Marsh Blazing Star.)

A complete species list is enclosed.

Jeff, it was a pleasure working with you. If you have any questions, please do not hesitate to call.

Sincerely,

Margo Milde

Margo Milde
1206 Raleigh Road
Glenview, IL 60025

(847) 724-4716
E-mail: Stafagility@Hotmail.com

Margo Milde
1206 Raleigh Road
Glenview, IL 60025
September 16, 1999

Mr. Jeff Stringer
ELM Consulting
18-2 E. Dundee Road
Barrington, IL 60010

Re: Comprehensive plant list, Site 2 and Site 3, August 1999

Enclosed is the comprehensive plant list for Site 2 and Site 3, associated with the former John Mansville manufacturing facility in Waukegan, IL, that we visited August 2 and August 5, 1999. It completes the report that I mailed to you last week.

Any plant list can never be totally complete. However, I believe this list accurately represents the plant communities to be found on that site.

I enjoyed the project. Since I so rarely botanize in ruderal areas, I had three "new species" for my personal lists that I had never encountered before (based upon the collections I made there and my research at the Morton Arborerum herbarium):

1. Plantago indica, Whorled plantain. That was my "mystery plant" along the railroad tracks. A Eurasian, it is an occasional in "waste areas" in the Chicago area.
2. Equisetum x ferrissii, Joliet horsetail. I had initially field ID'd this as Equisetum hyemale, but since it looked a little "different", I decided to take a specimen back and research. It proved to be this hybrid, a cross between E. hyemale and E. laevigatum, as described in Plants of the Chicago Region by Swink/Wilhelm. They say that they find it "in ballast along railroads and in ruderal areas." It differs from E. hyemale in having only the lower sheaths gray (as opposed to all the sheaths being gray in E. hyemale.)
3. Cyperus x mesochorus, Midland sand sedge. I had found the related C. schweinitzii on the beach, but this plant looked similar but "different." This hybrid is a cross between C. schweinitzii, and one or more other Cyperus members (it gets complicated; I'll spare you the details!) It differs from C. schweinitzii by having a narrower and smoother culm, and spreading (rather than ascending) spikelets.

What I thought was a pondweed in the outflow channel was, in fact, Heteranthera dubia, Water star grass. I realized my error as soon as I examined the specimen closely, because, unlike Potamogeton species, this genus lacks a midrib. Also, my "mystery flower" on the beach was Erucastrum gallicum, Dog mustard, a Eurasian weed.

I trust that this completes the project. Again, it was a pleasure to work with you, and if I can be of any future service, please don't hesitate to call.

Sincerely,

Margo Milde

Margo Milde
(847) 724-4716
E-mail: Stafagility@hotmail.com

Site 2 Inside Fence

Primary communities: Disturbed dry/mesic prairie,swales

Genus	Species	Family	Common Name
Allium	cernuum	LILIACEAE	Nodding wild onion
Ambrosia	artemisiifolia var elatior	COMPOSITAE	Common ragweed
Apocynum	sibiricum	APOCYNACEAE	Dogbane
Artemisia	caudata	COMPOSITAE	Beach wormwood
Asclepias	syriaca	ASCLEPIADACEAE	Common milkweed
Asclepias	verticillata	ASCLEPIADACEAE	Whorled milkweed
Bidens	frondosa	COMPOSITAE	Common beggar's ticks
Cyperus	x mesochorus	CYPERACEAE	Midland sand sedge
Echinochloa	crusgalli	GRAMINEAE	Barnyard grass
Eleocharis	erythropoda	CYPERACEAE	Red-rooted spike rush
Equisetum	arvense	EQUISETACEAE	Common horsetail
Equisetum	x ferrissii	EQUISETACEAE	Joliet horsetail
Eragrostis	capillaris	GRAMINEAE	Lace grass
Geum	canadense	ROSACEAE	Wood avens
Juncus	balticus var littoralis	JUNCACEAE	Lake shore rush
Juncus	dudleyi	JUNCACEAE	Dudley's rush
Juncus	torreyi	JUNCACEAE	Torrey's rush
Panicum	virgatum	GRAMINEAE	Switch grass
Phragmites	australis	GRAMINEAE	Common reedgrass
Poa	compressa	GRAMINEAE	Canada bluegrass
Populus	deltoides	SALICACEAE	Eastern cottonwood
Potentilla	anserina	ROSACEAE	Silverweed
Rhus	radicans	ANACARDIACEAE	Poison ivy
Rhus	typhina	ANACARDIACEAE	Staghorn sumac
Salix	exigua	SALICACEAE	Sandbar willow
Scirpus	pungens	CYPERACEAE	Chairmaker's rush
Scirpus	validus creber	CYPERACEAE	Great bulrush
Solidago	altissima	COMPOSITAE	Tall goldenrod
Solidago	juncea	COMPOSITAE	Early goldenrod
Xanthium	strumarium	COMPOSITAE	Cocklebur

Threatened and Endangered Plant Species Survey
Site 2 and Site 3, Waukegan, IL
August 1999
Prepared by Margo Milde

Site 2 Fishing Pier

Primary communities: Beach, fencerow, channel, swale

Genus	Species	Family	Common Name
Ammophila	breviligulata	GRAMINEAE	Beach marram grass
Cornus	stolonifera	CORNACEAE	Red-osier dogwood
Corispermum	hyssopifolium	CHENOPOCIACEAE	Bugseed
Cyperus	erythrorhizos	CYPERACEAE	Red-rooted nut sedge
Cyperus	schweinitzii	CYPERACEAE	Rough sand sedge
Diplachne	fascicularis	GRAMINEAE	Salt-meadow grass
Elymus	canadensis	GRAMINEAE	Canada rye
Eragrostis	pectinacea	GRAMINEAE	Small love grass
Heteranthera	dubia	PONTEDERIACEAE	Water star grass
Juncus	brachycephalus	JUNCACEAE	Short-headed rush
Juncus	balticus var littoralis	JUNCACEAE	Lake shore rush
Juncus	torreyi	JUNCACEAE	Torrey's rush
Lycopus	asper	LABIATAE	Rough water horehound
Panicum	virgatum	GRAMINEAE	Switch grass
Parthenocissus	inserta	VITACEAE	Thicket creeper
Polygonatum	canaliculatum	LILIACEAE	Smooth Solomon's seal
Populus	deltoides	SALICACEAE	Eastern cottonwood
Potentilla	anserina	ROSACEAE	Silverweed
Salix	glaucophylloides	SALICACEAE	Blue-leaved willow
Scirpus	pungens	CYPERACEAE	Charimaker's rush
Smilacena	stellata	LILIACEAE	Starry false Sol. seal
Solidago	altissima	COMPOSITAE	Tall goldenrod
Solidago	graminifolia var nuttallii	COMPOSITAE	Hairy grass-lvd. goldenrod
Spartina	pectinata	GRAMNEAE	Prairie cordgrass
Verbena	hastata	VERBANACEAE	Blue vervain
Xanthium	strumarium	COMPOSITAE	Cocklebur

Threatened and Endangered Plant Species Survey
Site 2 and Site 3, Waukegan, IL
August 1999
Prepared by Margo Milde

Site 2 Beach Front

Primary communities: Beach, stabilized dunes, pannes

Genus	Species	Family	Common Name
Alisma	subcordatum	ALISMACEAE	Common water plantain
Ammophila	breviligulata	GRAMINEAE	Beach marram grass
Andropogon	scoparius	GRAMINEAE	Little bluestem
Artemisia	caudata	COMPOSITAE	Beach wormwood
Aster	pilosus	COMPOSITAE	Hairy aster
Cakile	edentula	CRUCIFERAE	Sea rocket
Calamagrostis	canadensis	GRAMINEAE	Bluejoint grass
Carex	stipata	CYPERACEAE	Common fox sedge
Ceratophyllum	demersum	CERATOPHYLLACEAE	Coontail
Chamaesyce	polygonifolia	EUPHORBIACEAE	Seaside spurge
Corispermum	hyssopifolium	CHENOPODIACEAE	Bugseed
Cornus	stolonifera	CORNACEAE	Red-osier dogwood
Cycloloma	atriplicifolium	CHENOPODIACEAE	Winged pigweed
Cyperus	rivularis	CYPERACEAE	Brook nut sedge
Cyperus	schweinitzii	CYPERACEAE	Rough sand sedge
Diplachne	fascicularis	GRAMINEAE	Salt-meadow grass
Echinochloa	crusgallii	GRAMINEAE	Barnyard grass
Eleocharis	acicularis	CYPERACEAE	Needle spikerush
Eleocharis	erythropoda	CYPERACEAE	Red-rooted spikerush
Eragrostis	pectinacea	GRAMINEAE	Small love grass
Erucastrum	gallicum	CRUCIFERAE	Dog mustard
Juncus	balticus var littoralis	JUNCACEAE	Lake shore rush
Lepidium	virginicum	CRUCIFERAE	Common peppergrass
Panicum	virgatum	GRAINEAE	Switch grass
Polygonum	persicaria	POLYGONACEAE	Lady's thumb
Populus	deltoides	SALICACEAE	Eastern cottonwood
Potamogeton	pectinatus	ZOSTERACEAE	Sago pondweed
Potentilla	anserina	ROSACEAE	Silverweed
Ranunculus	sceleratus	RANUNCULACEAE	Cursed buttercup
Salix	eriocephala	SALICEAE	Heart-lvd. willow
Salix	exigua	SALICACEAE	Sandbar willow
Salix	glaucophylloides	SALICEAE	Blue-lvd. willow
Scirpus	pungens	CYPERACEAE	Chairmaker's rush
Solidago	nrmoralis	COMPOSITAE	Old field goldenrod
Solidago	graminifolia var nuttallii	COMPOSITAE	Hairy grass-lvd. goldenrod
Triplasis	purpurea	GRAMINEAE	Purple sand grass
Xanthium	strumarium	COMPOSITAE	Cocklebur

Threatened and Endangered Plant Species Survey
Site 2 and Site 3, Waukegan, IL
August 1999
Prepared by Margo Milde

Site 3 Railroad track border

Primary communities: Mesic/wet prairie, sedge meadow

Genus	Species	Family	Common Name
A[illegible]opogon	gerardii	GRAMINEAE	Big bluestem
As[illegible]epias	tuberosa	ASCLEPIACEAE	Butterfly weed
Aster	azureus	COMPOSITAE	Sky blue aster
Aster	ericoides	COMPOSITAE	Heath aster
Calamagrostis	canadensis	GRAMINEAE	Bluejoint grass
Calamovilfa	longifolia	GRAMINEAE	Sand reed grass
Carex	cristatella	CYPERACEAE	Crested oval sedge
Carex	pellita	CYPERACEAE	Broad-lvd. woolly sedge
Chenopodium	glaucum	CHENOPODIACEAE	Lamb's quarters
Chenopodium	botrys	CHENOPODIACEAE	Feather geranium
Cladium	mariscoides	CYPERACEAE	Twig rush
Convolvulus	sepium	CONVOLVULACEAE	Marsh bindweed
Cornus	stolonifera	CORNACEAE	Red-osier dogwood
Cyperus	erythrhyrhizos	CYPERACEAE	Red-rooted nut sedge
Eleocharis	elliptica	CYPERACEAE	Golden-seeded spike rush
Equisetum	x ferressii	EQUISETACEAE	Joliet horsetail
Eragrostis	capillaris	GRAMINEAE	Lace grass
Eu[illegible]torium	serotinum	COMPOSITAE	Late boneset
Eu[illegible]rbia	correlata	EUPHORBIACEAE	Flowering spurge
Helianthus	grosseseratus	COMPOSITAE	Sawtooth sunflower
Helianthus	pauciflorus var rigidus	COMPOSITAE	Stiff sunflower
Iris	virginica	IRACEAE	Blue flag iris
Juncus	balticus var littoralis	JUNCACEAE	Lake shore rush
J[illegible]us	torreyi	JUNCACEAE	Torrey's rush
Ju[illegible]erus	verginiana var crebra	PINACEAE	Red cedar, juniper
[illegible]iatris	aspera	COMPOSITAE	Rough blazing star
[illegible]iatris	cylindracea	COMPOSITAE	Cylindrical blazing star
[illegible]iatris	spicata	COMPOSITAE	Marsh blazing star
[illegible]ycopus	americanus	LABIATAE	Common water horehound
[illegible]ythrum	salicaria	LYTHRACEAE	Purple looststrife
Monarda	fistulosa	LABIATAE	Wild bergamont
Pa[illegible]um	virgatum	GRAMINEAE	Switch grass
Plantago	indica	PLANTAGINACEAE	Whorled plantain
Potentilla	anserina	ROSACEAE	Silverweed
Potentilla	fruticosa	ROSACEAE	Shrubby cinquefoil
Pycanthemum	virginianum	LABIATAE	Mountain mint
Rhamnus	frangula	RHAMNACEAE	Glossy buckthorn
Salix	glaucophylloides	SALICACEAE	Blue-leaved willow
Scirpus	validus var creber	CYPERACEAE	Great bulrush
Scirpus	pungens	CYPERACEAE	Chairmaker's rush
Solidago	altissima	COMPOSITAE	Tall goldenrod
Solidago	gigantea	COMPOSITAE	Late goldenrod
Solidago	graminifolia var nuttallii	COMPOSITAE	Hairy grass-lvd. goldenrod
Solidago	juncea	COMPOSITAE	Early goldenrod
Solidago	nemoralis	COMPOSITAE	Old field goldenrod
Solidago	speciosa	COMPOSITAE	Showy goldenrod
Sorghastrum	nutans	GRAMINEAE	Indian grass
S[illegible]ina	pectinata	GRAMINEAE	Prairie cordgrass
Tradescantia	ohioensis	COMMELINACEAE	Common spiderwort

Threatened and Endangered Plant Species Survey
Site 2 and Site 3, Waukegan, IL
August 1999
Prepared by Margo Milde

DRAFT

Appendix K

Wetland Delineation Report (*Wetland Assessment of Site 2 and Site 3 Along Greenwood Avenue, Waukegan, Lake County, Illinois* – Christopher B. Burke Engineering, LTD)

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 West Higgins Road • Suite 600 • Rosemont, Illinois 60018-4920 • TEL (847) 823-0500 • FAX (847) 823-0520

September 23, 1999

Elm Consulting, L.L.C.
18-2 E. Dundee Road, Suite 100
Barrington, IL 60010

Attention: Mr. Jeff Stringer

Subject: Wetland Assessment of Site 2 and Site 3 Along Greenwood Avenue, Waukegan, Lake County, Illinois
(CBBEL Project No. 99-364)

Dear Mr. Stringer:

As requested, Christopher B. Burke Engineering, Ltd. (CBBEL) has completed a wetland assessment of the above-referenced study areas in Lake County, Illinois. Seven (7) wetland areas and one (1) "waters of the U.S." area consisting of Lake Michigan frontage were identified at the time of the site visit. An aerial photograph depicting the approximate wetland delineation is included as Exhibit 8. CBBEL recommends that the jurisdictional areas be professionally field surveyed to determine their true size and location with respect to property boundaries. If a survey is completed, we recommend CBBEL review it for accuracy and completeness.

This wetland assessment is based on field conditions at the time of the CBBEL site visit and our understanding of current federal, state and local regulations. An evaluation of historic site conditions was not performed.

LOCATION

Site 2 is located along an eastward extension of the Greenwood Avenue right-of-way, along Lake Michigan while Site 3 is located at the southeast corner of Pershing Road and Greenwood Avenue. Both subject sites are located in Waukegan, Lake County, Illinois, as shown in Exhibit 1. Geographically, the sites are located in Section 15, Township 45 North, Range 10, East of the Third Principal Meridian. The property boundaries were taken from a sketch provided by your office, dated August 3, 1999.

NATIONAL WETLAND INVENTORY

The National Wetland Inventory (NWI), Waukegan and Zion Quadrangles (1981), as illustrated on Exhibit 2, indicates the presence of wetland area on site. The NWI serves only as a large-scale guide; actual wetland types and boundaries often vary. The indicated wetland is categorized as follows:

L2USJ	-	Lacustrine, Littoral, Unconsolidated Shore, Intermittently Flooded
L10WH	-	Lacustrine, Limnetic, Open Water, Permanently Flooded

LAKE COUNTY WETLAND INVENTORY AND ADVANCED IDENTIFICATION

The Lake County Wetland Inventory and Advanced Identification (LCWI and ADID) map, Waukegan Township (1993), as shown on Exhibit 3, indicates the presence of wetland areas within the subject sites. The identified wetlands are not classified as areas of High Functional Value. As with the NWI, the ADID map is used only as a large-scale guide and actual wetland boundaries may vary.

SOIL SURVEY

The Soil Survey of Lake County, Illinois (1970), as shown on Exhibit 4, was reviewed to determine the location of hydric soil on-site. The presence of hydric soil can be indicative of wetland conditions. The following soil is present within the subject sites:

ML - Made Land

NATURAL RESOURCES CONSERVATION SERVICE WETLAND MAP

The Natural Resources Conservation Service (NRCS) wetland map for Lake County, Illinois (undated), as shown on Exhibit 5, was reviewed to determine the location of wetlands documented within agricultural land at the subject site. The NRCS is the lead agency responsible for determining whether wetlands are located within agricultural land. The NRCS wetland map indicates that wetlands are located within the subject sites. However, since the sites do not contain agricultural land, no further consultation with NRCS is required.

DRAINAGE

The Hydrologic Atlas, Waukegan and Zion Quadrangles (1967), as illustrated on Exhibit 6, was reviewed to determine the historic local drainage pattern. The Atlas indicates site runoff drains east into Lake Michigan.

FLOOD PLAIN

The Flood Insurance Rate Map (FIRM) for Lake County and Incorporated Areas, Illinois, Community Panel Numbers 17097C 0089F and 17097C 0095F, effective September 3, 1997, as illustrated on Exhibit 7, was reviewed to determine the location of regulatory floodplain within site boundaries. The presence of identified floodplain can be indicative of wetland hydrology. The FIRM indicates that the southern and eastern portion of Site 2 is located within Zone AE (100-year) floodplain. No regulatory floodplain is located within Site 3.

WETLAND DELINEATION

On September 1, 1999, CBBEL staff members performed a wetland field investigation of the subject site. The wetland boundaries were delineated in accordance with the methodology established by the U.S. Army Corps of Engineers (COE). The aforementioned exhibits were used to assist in the delineation. The approximate wetland boundaries are shown on Exhibit 8. Information collected on-site is listed in the attached data forms

METHODOLOGY

The Corps of Engineers Wetland Delineation Manual, dated January, 1987, identifies the mandatory technical criteria for wetland identification. The three essential characteristics of a jurisdictional wetland are hydrophytic vegetation, hydric soils, and wetland hydrology.

The hydrophytic vegetation criteria is based on a separation of plants into five basic groups: (1) obligate wetland plants (OBL) that occur almost always (estimated probability >99%) in wetlands under natural conditions; (2) facultative wetland plants (FACW) that usually occur in wetlands (estimated probability 67-99%), but occasionally are found in nonwetlands; (3) facultative plants (FAC) that are equally likely to occur in wetlands or nonwetlands (probability 34-66%); and (4) facultative upland plants (FACU) that usually occur in nonwetlands (estimated probability 67-99%), but occasionally are found in wetlands (estimated probability 1-33%); and (5) obligate upland plants (UPL) that almost always (estimated probability >99%) occur in nonwetlands under natural

conditions. If greater than 50% of the plants present are FAC, FACW, or OBL, the subject area is considered jurisdictional in terms of vegetation.

Hydric soils are defined in the manual as "soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part." Field indicators include color, mottling, gleying, and odor.

The wetland hydrology criterion is often the most difficult to determine. Typically, the presence of water for a week or more during the growing season creates anaerobic conditions in the soil which in turn lead to the establishment of hydrophytic vegetation. Examples of wetland hydrology field indicators include morphological adaptations of plants, driftlines, sediment deposits, and water marks.

SUBJECT SITE

The subject site consists of two study areas located adjacent to Greenwood Avenue in Waukegan, Illinois. Site 2 is located adjacent to Lake Michigan and north of a large Commonwealth Edison facility, while Site 3 is located southeast of the intersection of Greenwood Avenue and Pershing Road. Both sites are dominated by herbaceous species and appear to have been significantly disturbed in the past. In the opinion of CBBEL, the sites contain seven (7) wetland areas and one (1) "waters of the U.S." area which are regulated by the U.S. Army Corps of Engineers.

The following is a brief description of the identified wetlands with a list of the dominant plant species observed and their corresponding wetland indicator categories. A coefficient of conservatism (C -value) is also included for each plant species. C-values were established by Swink and Wilhelm (1994) and attempt to quantify a wetland's native attributes for comparative purposes. Each plant species is rated on a scale of zero to 10, zero representing plants commonly found in a variety of habitats, and 10 being plants found only under specific ecological conditions. An asterisk (*) rating represents non-native or noxious species. The C-value of plants found in wetland areas can give some insight as to the overall quality or value of the wetland. Wetlands containing an abundance of plants with a low C-value suggest that these wetlands have been disturbed in the past. Wetlands containing an abundance of plants with a high C-value suggest that specific ecological conditions necessary for their survival are intact; thus, disturbance is probably minimal and the wetland maintains much of its original value. A mean C-value of $\geq$3.5 suggests that a wetland maintains at least some of its original ecological integrity.

Scrub-Shrub Wetland

CBBEL staff characterized two wetlands of this community type on Site 2 at data points 1A and 2A as shown on Exhibit 8. The areas consist of shallow, isolated depressions dominated by a variety of herbaceous and woody species of low to

moderate quality. Dominants identified by CBBEL included sandbar willow (*Salix interior*), cottonwood (*Populus deltoides*) and gray dogwood (*Cornus racemosa*). Evidence of positive wetland hydrology included water marks, drift material and water stained vegetation. The soil is mapped as Made Land, however, the CBBEL field reconnaissance identified a primarily undisturbed profile consisting of sand with organic streaking, which is a hydric soil indicator.

The following lists identified species and a calculated native mean *C*-value:

FLORISTIC QUALITY DATA	NATIVE	95.2%	ADVENTIVE	4.8%
20 NATIVE SPECIES	2 Tree	9.5%	0 Tree	0.0%
21 Total Species	3 Shrub	14.3%	1 Shrub	4.8%
2.45 NATIVE MEAN C	2 W-Vine	9.5%	0 W-Vine	0.0%
2.33 W/Adventives	0 H-Vine	0.0%	0 H-Vine	0.0%
10.96 NATIVE FQI	8 P-Forb	38.1%	0 P-Forb	0.0%
10.69 W/Adventives	1 B-Forb	4.8%	0 B-Forb	0.0%
-2.5 NATIVE MEAN W	2 A-Forb	9.5%	0 A-Forb	0.0%
-2.2 W/Adventives	0 P-Grass	0.0%	0 P-Grass	0.0%
AVG: FAC. WETLAND (-)	0 A-Grass	0.0%	0 A-Grass	0.0%
	1 P-Sedge	4.8%	0 P-Sedge	0.0%
	0 A-Sedge	0.0%	0 A-Sedge	0.0%
	1 Cryptogam	4.8%		

C	SCIENTIFIC NAME	W	WETNESS	PHYSIOG.	COMMON NAME
3	Aster simplex	-5	OBL	Nt P-FORB	PANICLED ASTER
1	Bidens frondosa	-3	FACW	Nt A-FORB	COMMON BEGGAR'S TICKS
1	Cornus racemosa	-2	FACW-	Nt SHRUB	GRAY DOGWOOD
0	Equisetum arvense	0	FAC	CRYPTOGAM	HORSETAIL
0	Erigeron annuus	1	FAC-	Nt B-FORB	ANNUAL FLEABANE
2	Geum laciniatum trichocarpum	-3	FACW	Nt P-FORB	ROUGH AVENS
4	Juncus torreyi	-3	FACW	Nt P-FORB	TORREY'S RUSH
0	Polygonum lapathifolium	-4	FACW+	Nt A-FORB	HEARTSEASE
2	Populus deltoides	-1	FAC+	Nt TREE	EASTERN COTTONWOOD
6	Potentilla anserina	-4	FACW+	Nt P-FORB	SILVERWEED
*	ROSA MULTIFLORA	3	FACU	Ad SHRUB	MULTIFLORA ROSE
2	Rhus radicans	-1	FAC+	Nt W-VINE	POISON IVY
2	Rubus occidentalis	5	UPL	Nt SHRUB	BLACK RASPBERRY
5	Salix amygdaloides	-3	FACW	Nt TREE	PEACH-LEAVED WILLOW
1	Salix interior	-5	OBL	Nt SHRUB	SANDBAR WILLOW
5	Scirpus pungens	-5	OBL	Nt P-SEDGE	CHAIRMAKER'S RUSH
4	Solidago gigantea	-3	FACW	Nt P-FORB	LATE GOLDENROD
4	Solidago graminifolia	-2	FACW-	Nt P-FORB	GRASS-LEAVED GOLDENROD
1	Typha angustifolia	-5	OBL	Nt P-FORB	NARROW-LEAVED CATTAIL
4	Verbena hastata	-4	FACW+	Nt P-FORB	BLUE VERVAIN
2	Vitis riparia	-2	FACW-	Nt W-VINE	RIVERBANK GRAPE

Man-Induced Wetlands

Man-induced wetlands exist on Site 2 and are characterized at data points 3A, 4A, and 5A, as shown on Exhibit 8. During the site visit, CBBEL staff noted a dominance of hydrophytic vegetation and positive wetland hydrology in these locations, however, the upper soil profile lacked characteristic hydric soil indicators because of disturbance.

As specified in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual, wetland determinations require an evaluation utilizing methodology for "Atypical

Situations" when a determination has already been made under the Routine Determination Methodology and the Comprehensive Determination Methodology "that positive indicators of hydrophytic vegetation, hydric soils and/or wetland hydrology could not be found due to effects of recent human activities or natural events". Use of methodology for Atypical Situations is applicable to delineations "which may result in removal or covering of indicators of one or more wetland parameters, naturally occurring events which may result in either creation or alteration of wetlands and in delineation wetlands that have been purposely or incidentally created by human activities, but in which wetland indicators of one or more parameters are absent".

"A man-induced wetland is an area that has developed at least some characteristics of naturally occurring wetland due to either intentional or incidental human activities. In virtually all cases man-induced wetlands involve a significant change in the hydrologic regime which may either increase or decrease the wetness of the area". Methodology, as specified in the manual, required the application of four steps including the determination whether the area represents a man-induced wetland, a determination whether a permit will be needed if the area if found to be a wetland, a characterization of the vegetation, soils and hydrology and a wetland determination noting that "evidence that the change in hydrology occurred so recently that soils could not have developed hydric characteristics". The man-induced areas at data points 3A, 4A and 5A contain positive wetland hydrology, a dominance of hydrophytic vegetation and a lack of hydric soils.

Also, as previously noted, a determination is required to evaluate whether a permit will be needed if the area is found to be a wetland or if the man made area is exempt from COE jurisdiction. In the opinion of the CBBEL field investigators, these areas are not exempt from COE jurisdiction. As stated in the COE regulations, water filled depressions created in dry land incidental to construction activity may be exempt from COE jurisdiction if they have not been abandoned for at least five years. Past aerial photography (1987) and field discussions with you indicate that these portions of the property were graded prior to 1994.

Therefore, in the opinion of CBBEL the areas characterized at data points 3A, 4A and 5A are jurisdictional wetlands utilizing COE methodology for Atypical Situations under the subsection regarding man-induced wetlands and do not meet the COE exemption criteria for creation in dry land because the graded area in the upland soil portions of the parcel have been abandoned for at least five years.

A list of the identified species and a calculated native mean C- value follows:

FLORISTIC QUALITY DATA	NATIVE	91.7%	ADVENTIVE	8.3%
11 NATIVE SPECIES	2 Tree	16.7%	0 Tree	0.0%
12 Total Species	1 Shrub	8.3%	0 Shrub	0.0%
2.64 NATIVE MEAN C	0 W-Vine	0.0%	0 W-Vine	0.0%
2.42 W/Adventives	0 H-Vine	0.0%	0 H-Vine	0.0%
8.74 NATIVE FQI	3 P-Forb	25.0%	1 P-Forb	8.3%

8.37	W/Adventives	0 B-Forb	0.0%	0 B-Forb	0.0%
-3.4	NATIVE MEAN W	1 A-Forb	8.3%	0 A-Forb	0.0%
-3.5	W/Adventives	1 P-Grass	8.3%	0 P-Grass	0.0%
AVG:	FAC. WETLAND	1 A-Grass	8.3%	0 A-Grass	0.0%
		2 P-Sedge	16.7%	0 P-Sedge	0.0%
		0 A-Sedge	0.0%	0 A-Sedge	0.0%
		0 Cryptogam	0.0%		

C	SCIENTIFIC NAME	W	WETNESS	PHYSIOG.	COMMON NAME
1	Bidens frondosa	-3	FACW	Nt A-FORB	COMMON BEGGAR'S TICKS
0	Echinochloa crusgalli	-3	FACW	Nt A-GRASS	BARNYARD GRASS
2	Eleocharis erythropoda	-5	OBL	Nt P-SEDGE	RED-ROOTED SPIKE RUSH
4	Juncus torreyi	-3	FACW	Nt P-FORB	TORREY'S RUSH
*	LYTHRUM SALICARIA	-5	OBL	Ad P-FORB	PURPLE LOOSESTRIFE
5	Panicum virgatum	-1	FAC+	Nt P-GRASS	SWITCH GRASS
2	Populus deltoides	-1	FAC+	Nt TREE	EASTERN COTTONWOOD
5	Salix amygdaloides	-3	FACW	Nt TREE	PEACH-LEAVED WILLOW
1	Salix interior	-5	OBL	Nt SHRUB	SANDBAR WILLOW
4	Scirpus pendulous	-5	OBL	Nt P-SEDGE	RED BULRUSH
4	Solidago gigantea	-3	FACW	Nt P-FORB	LATE GOLDENROD
1	Typha angustifolia	-5	OBL	Nt P-FORB	NARROW-LEAVED CATTAIL

"Waters of the U.S." – Lake Michigan

CBBEL staff characterized this jurisdictional "waters of the U.S." area at data point 6A as shown on Exhibit 8. The area consists of Lake Michigan and contiguous beachfront. At the time of the CBBEL site visit, evidence of positive wetland hydrology included drift material and water marks. The soil profile was almost exclusively sand and contained no organic streaking.

Emergent Drainageways

CBBEL staff identified two (2) jurisdictional wetlands on Site 3 which are characterized at data points 7A and 8A as shown on Exhibit 8. The wetland associated with data point 7A consists of a well defined drainageway containing steep side slopes and shallow flowing water. The wetland associated with data point 8A consists of a more shallow drainage swale at the base of railroad tracks which make up the study area's eastern boundary. The wetlands are dominated by lower quality herbaceous vegetation consisting of primarily cattail (Typha angustifolia), purple loosestrife (Lythrum salicaria) and red-rooted spikerush (Eleocharis erythropoda). Evidence of positive wetland hydrology included shallow inundation, saturation and driftlines. The soil is mapped as Made Land, however, the profiles were dark in color, contained low chroma matrices and organic odors. These soil conditions are characteristics commonly associated with hydric soils.

The following list identified species and a calculated native mean *C*-value:

FLORISTIC QUALITY DATA		NATIVE	88.2%	ADVENTIVE	11.8%
15	NATIVE SPECIES	1 Tree	5.9%	0 Tree	0.0%
17	Total Species	1 Shrub	5.9%	0 Shrub	0.0%
3.13	NATIVE MEAN C	0 W-Vine	0.0%	0 W-Vine	0.0%
2.76	W/Adventives	0 H-Vine	0.0%	0 H-Vine	0.0%
12.14	NATIVE FQI	9 P-Forb	52.9%	1 P-Forb	5.9%
11.40	W/Adventives	0 B-Forb	0.0%	0 B-Forb	0.0%

-3.1	NATIVE MEAN W	0	A-Forb	0.0%	0 A-Forb 0.0%
-3.2	W/Adventives	2	P-Grass	11.8%	1 P-Grass 5.9%
AVG:	FAC. WETLAND	0	A-Grass	0.0%	0 A-Grass 0.0%
		2	P-Sedge	11.8%	0 P-Sedge 0.0%
		0	A-Sedge	0.0%	0 A-Sedge 0.0%
		0	Cryptogam	0.0%	

C	SCIENTIFIC NAME	W	WETNESS	PHYSIOG.	COMMON NAME
5	Andropogon gerardii	1	FAC-	Nt P-GRASS	BIG BLUESTEM GRASS
4	Asclepias incarnata	-5	OBL	Nt P-FORB	SWAMP MILKWEED
4	Aster novae-angliae	-3	FACW	Nt P-FORB	NEW ENGLAND ASTER
3	Aster simplex	-5	OBL	Nt P-FORB	PANICLED ASTER
1	Cornus racemosa	-2	FACW-	Nt SHRUB	GRAY DOGWOOD
2	Eleocharis erythropoda	-5	OBL	Nt P-SEDGE	RED-ROOTED SPIKE RUSH
2	Helianthus grosseserratus	-2	FACW-	Nt P-FORB	SAWTOOTH SUNFLOWER
4	Juncus dudleyi	0	[FAC]	Nt P-FORB	DUDLEY'S RUSH
4	Juncus torreyi	-3	FACW	Nt P-FORB	TORREY'S RUSH
*	LYTHRUM SALICARIA	-5	OBL	Ad P-FORB	PURPLE LOOSESTRIFE
*	PHALARIS ARUNDINACEA	-4	FACW+	Ad P-GRASS	REED CANARY GRASS
5	Panicum virgatum	-1	FAC+	Nt P-GRASS	SWITCH GRASS
4	Scirpus pendulous	-5	OBL	Nt P-SEDGE	RED BULRUSH
1	Typha angustifolia	-5	OBL	Nt P-FORB	NARROW-LEAVED CATTAIL
1	Typha latifolia	-5	OBL	Nt P-FORB	BROAD-LEAVED CATTAIL
3	Ulmus americana	-2	FACW-	Nt TREE	AMERICAN ELM
4	Verbena hastata	-4	FACW+	Nt P-FORB	BLUE VERVAIN

CONCLUSION

The subject site was determined to have approximately 3.5 acres of jurisdictional wetland and "waters of the U. S." based on the methodology established by the U.S. Army Corps of Engineers.

Under current U. S. Army Corps of Engineers guidelines and in accordance with the Lake County Watershed Development Ordinance (Ordinance), areas of cumulative wetland/"waters of the U.S." disturbance greater than one-third acre in area will require a permit in conjunction with compensatory mitigation at a 1.5:1 replacement ratio to prevent a net loss of total wetland area. Areas of disturbance less than one-third acre in size also require a permit to be filled, however, compensatory mitigation may or may not be required depending upon COE discretion. This discretionary judgement is determined by the overall quality of the wetland and what impact the loss of the wetland would have on the surrounding area.

Generally, the following three steps must be attempted before authorization of a permit:

1. Avoidance of the wetland.
2. Minimization of the impact.
3. Compensatory mitigation.

Additionally, the Ordinance requires a 30' buffer for wetland covering an area between one-third acre and 1 acre, a 40' buffer for wetlands covering an area

between 1 acre and 2.5 acres, and a 50' buffer for wetlands covering an area greater than 2.5 acres.

In the opinion of CBBEL, any alteration of wetlands under present regulations will require a permit. CBBEL recommends that on-site wetland area be avoided to the extent possible. We can meet with you to discuss permitting options and likely COE preferences.

If you have any questions please do not hesitate to contact us.

Very truly yours,

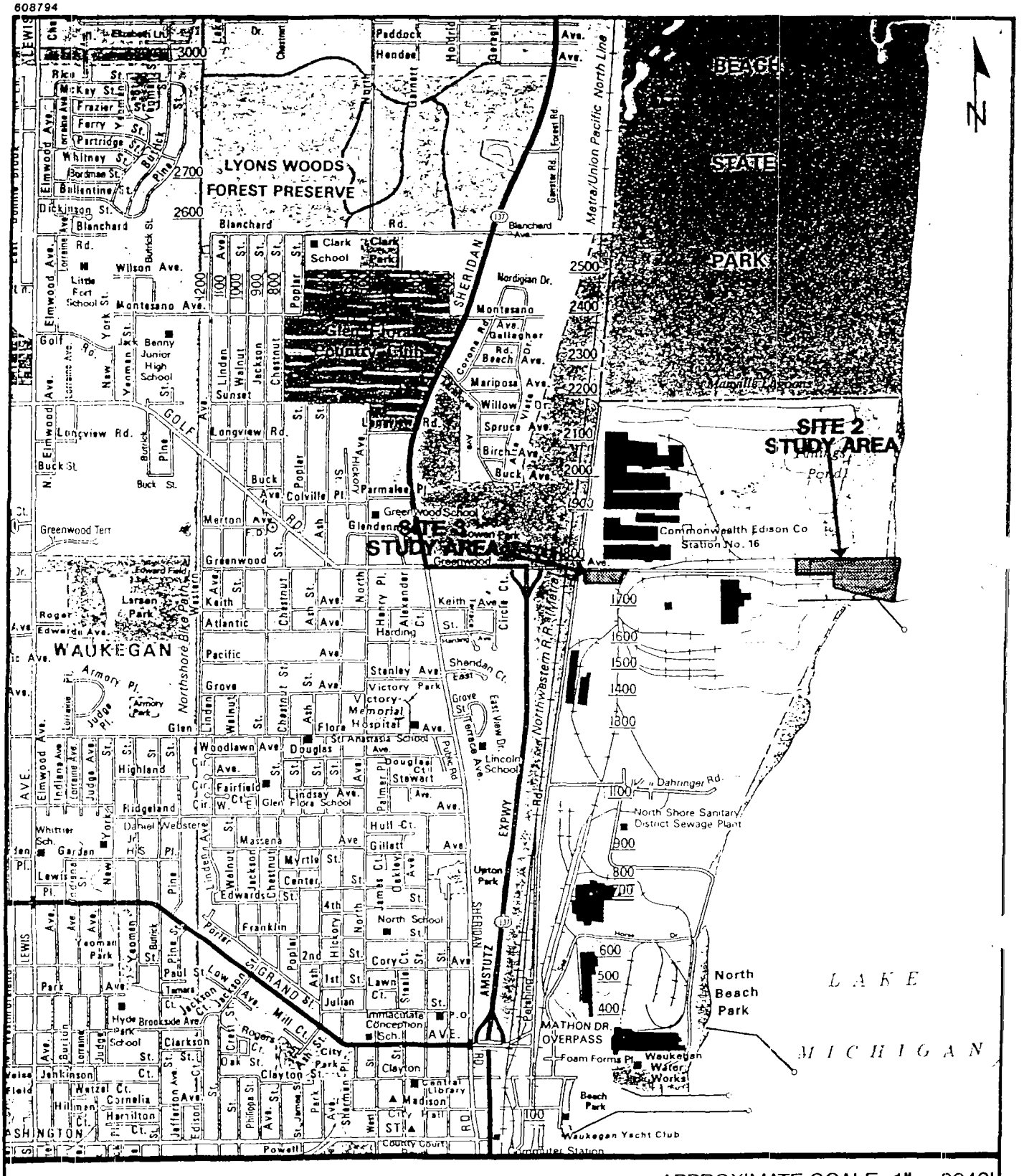
John E. Lingle
Ecologist

Thomas McArdle
Head Environmental Resource Section I

Christopher B. Burke, Ph.D., P.E.
President

TGM/jmr/cks
JMR W CORRSPD L99364.923

608794



APPROXIMATE SCALE: 1" = 2640'

PROPOSED PROJECT : UNKNOWN

WATERWAY : N/A

TRIBUTARY TO : LAKE MICHIGAN

NAME OF LOCAL GOVERNING COMMUNITY : WAUKEGAN

COUNTY : LAKE

STATE : IL

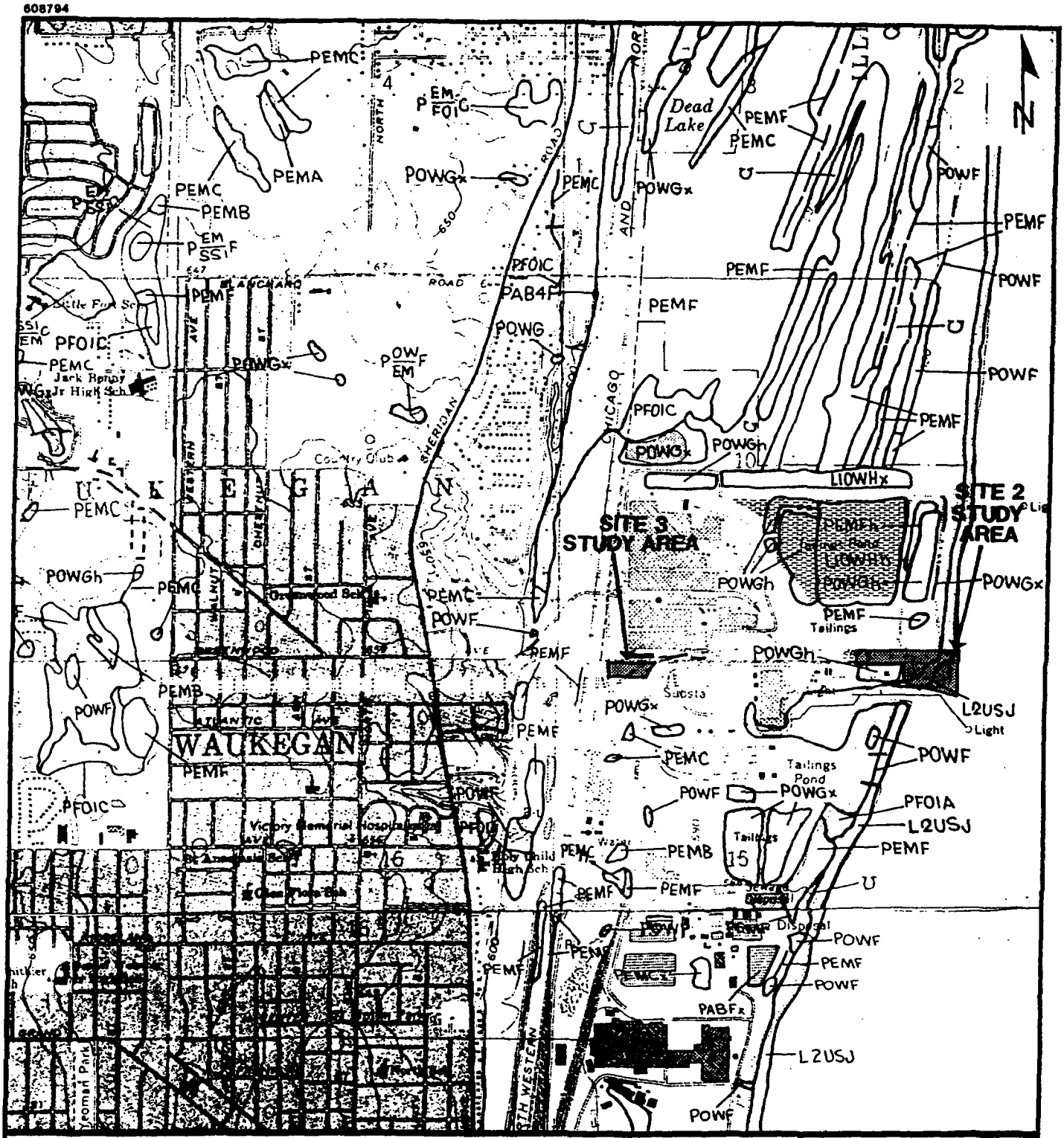
APPLICATION BY : CBBEL-AUTHORIZED AGENT

OWNER, PROPRIETOR, OR DULY AUTHORIZED AGENT.

CHRISTOPHER B. BURKE ENGINEERING LTD
9575 WEST HIGGINS ROAD SUITE 600
ROSEMONT, ILLINOIS 60018 (847) 823-0500

CLIENT	PROJECT No	
ELM CONSULTING	99-364	
TITLE		DATE 8/30/99
LOCATION MAP		EXHIBIT 1

608794



NOTE: TAKEN FROM THE NATIONAL WETLAND INVENTORY(NWI), WAUKEGAN AND ZION QUADRANGLES(1981)

LEGEND

L2USJ - LACUSTRINE,LITTORAL,UNCONSOLIDATED SHORE,INTERMITTENTLY FLOODED

L1OWH - LACUSTRINE,LIMNETIC,OPEN-WATER,PERMANENTLY FLOODED

APPROXIMATE SCALE: 1" = 2000'

PROPOSED PROJECT : UNKNOWN

COUNTY : LAKE

WATERWAY : N/A

STATE : IL

TRIBUTARY TO : LAKE MICHIGAN

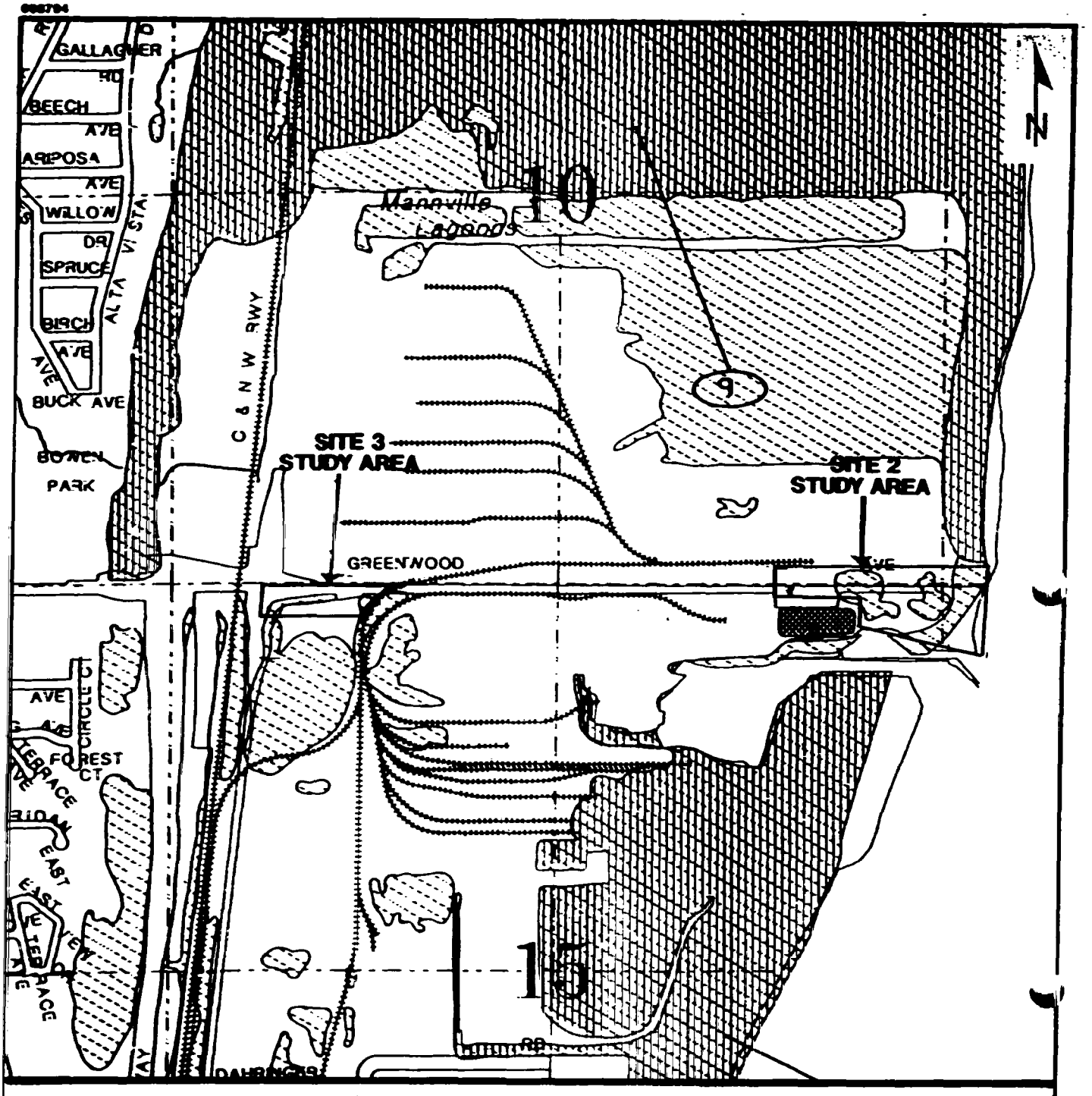
APPLICATION BY : CBBEL-AUTHORIZED AGENT

NAME OF LOCAL GOVERNING COMMUNITY : WAUKEGAN

OWNER, PROPRIETOR, OR DULY AUTHORIZED AGENT.

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 WEST HIGGINS ROAD SUITE 600
ROSEMONT, ILLINOIS 60018 (847) 823-0500

CLIENT	PROJECT No	
ELM CONSULTING	99-364	
TITLE: NATIONAL WETLAND INVENTORY		DATE 8/30/99
		EXHIBIT 2



NOTE: TAKEN FROM THE LAKE COUNTY WETLAND INVENTORY(LCWI) AND ADVANCED IDENTIFICATION(ADID) MAP. WAUKEGAN TOWNSHIP(1993)

LEGEND

WETLANDS - areas with a high potential for exhibiting hydric soil, hydrophytic vegetation and required hydrologic conditions.

APPROXIMATE SCALE: 1" = 1000'

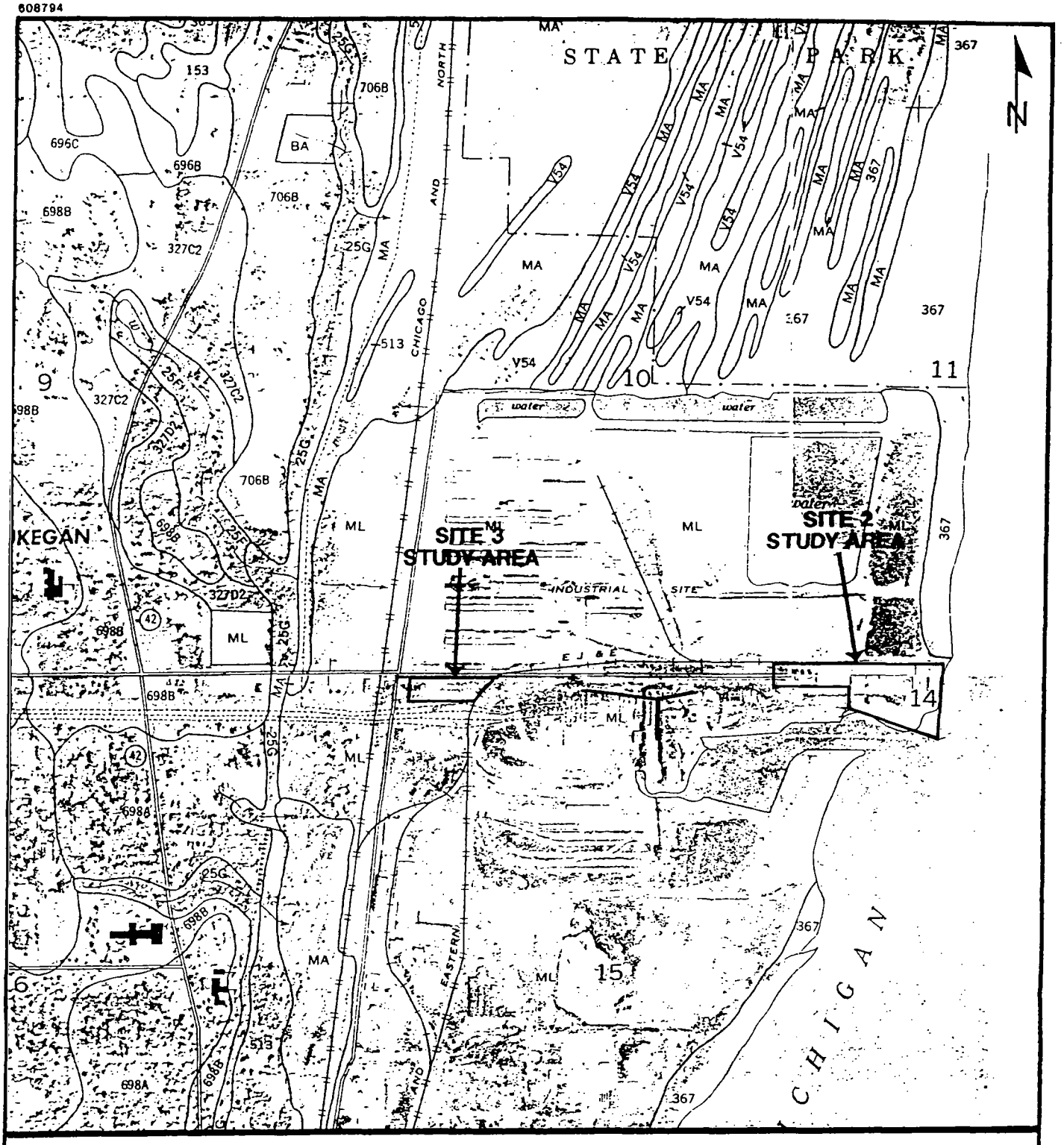
PROPOSED PROJECT : UNKNOWN
WATERWAY : N/A
TRIBUTARY TO : LAKE MICHIGAN
NAME OF LOCAL GOVERNING COMMUNITY : WAUKEGAN

COUNTY : LAKE
STATE : IL
APPLICATION BY : CBBEL-AUTHORIZED AGENT
OWNER, PROPRIETOR, OR DULY AUTHORIZED AGENT.

CHRISTOPHER B. BURKE ENGINEERING, LTD
9575 WEST HIGGINS ROAD SUITE 600
ROSEMONT, ILLINOIS 60018 (847) 823-0500

CLIENT	PROJECT No	
ELM CONSULTING	99-364	
TITLE: LAKE COUNTY WETLAND INVENTORY		DATE 8/30/99
		EXHIBIT 3

608794



NOTE: TAKEN FROM THE SOIL SURVEY OF LAKE COUNTY, ILLINOIS(1970)

LEGEND

ML - MADE LAND

APPROXIMATE SCALE: 1" = 1320'

PROPOSED PROJECT : UNKNOWN

COUNTY : LAKE

WATERWAY : N/A

STATE : IL

TRIBUTARY TO : LAKE MICHIGAN

APPLICATION BY : CBBEL-AUTHORIZED AGENT

NAME OF LOCAL GOVERNING COMMUNITY : WAUKEGAN

OWNER, PROPRIETOR, OR DULY AUTHORIZED AGENT.

CHRISTOPHER B. BURKE ENGINEERING, LTD
9575 WEST HIGGINS ROAD SUITE 600
ROSEMONT, ILLINOIS 60018 (847) 823-0500

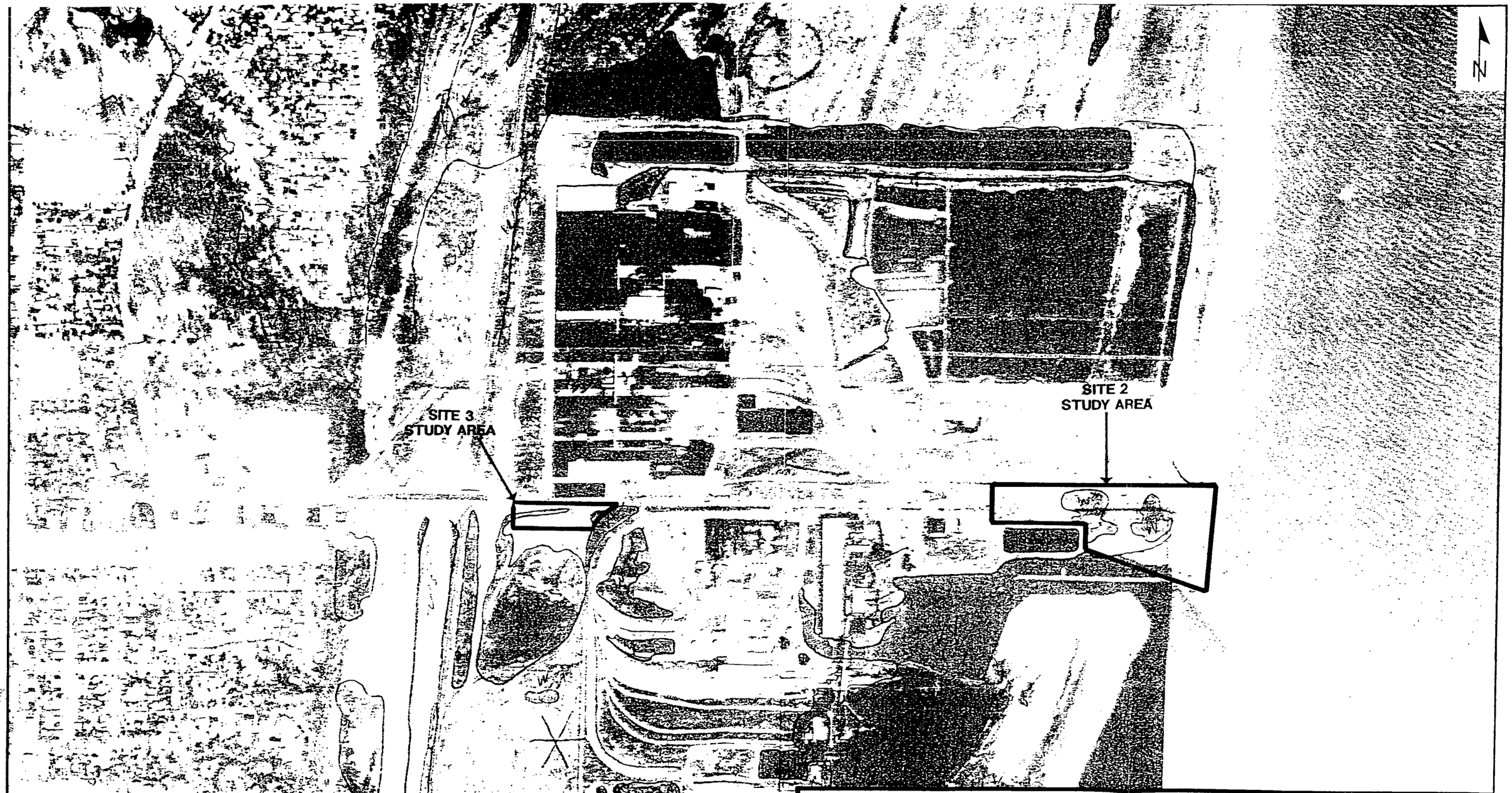
CLIENT	PROJECT No
ELM CONSULTING	99-364

TITLE: SOIL SURVEY

DATE: 8/30/99

EXHIBIT 4

ROYAL BLUEPRINT COMPANY



NOTE: TAKEN FROM THE NATURAL RESOURCE CONSERVATION SERVICE(NRCS) WETLAND MAP(UNDATED)

LEGEND
W - WETLAND

APPROXIMATE SCALE: 1" = 660'

PROPOSED PROJECT : UNKNOWN
WATERWAY : N/A
TRIBUTARY TO : LAKE MICHIGAN
NAME OF LOCAL GOVERNING COMMUNITY : WAUKEGAN

COUNTY LAKE
STATE IL
APPLICATION BY : CBBEL-AUTHORIZED AGENT
OWNER, PROPRIETOR, OR DULY AUTHORIZED AGENT.

APPROVED

CHRISTOPHER B. BURKE ENGINEERING LTD
9575 WEST HIGGINS ROAD SUITE 600
ROSEMONT, ILLINOIS 60018 (847) 823-0500

CLIENT ELM CONSULTING

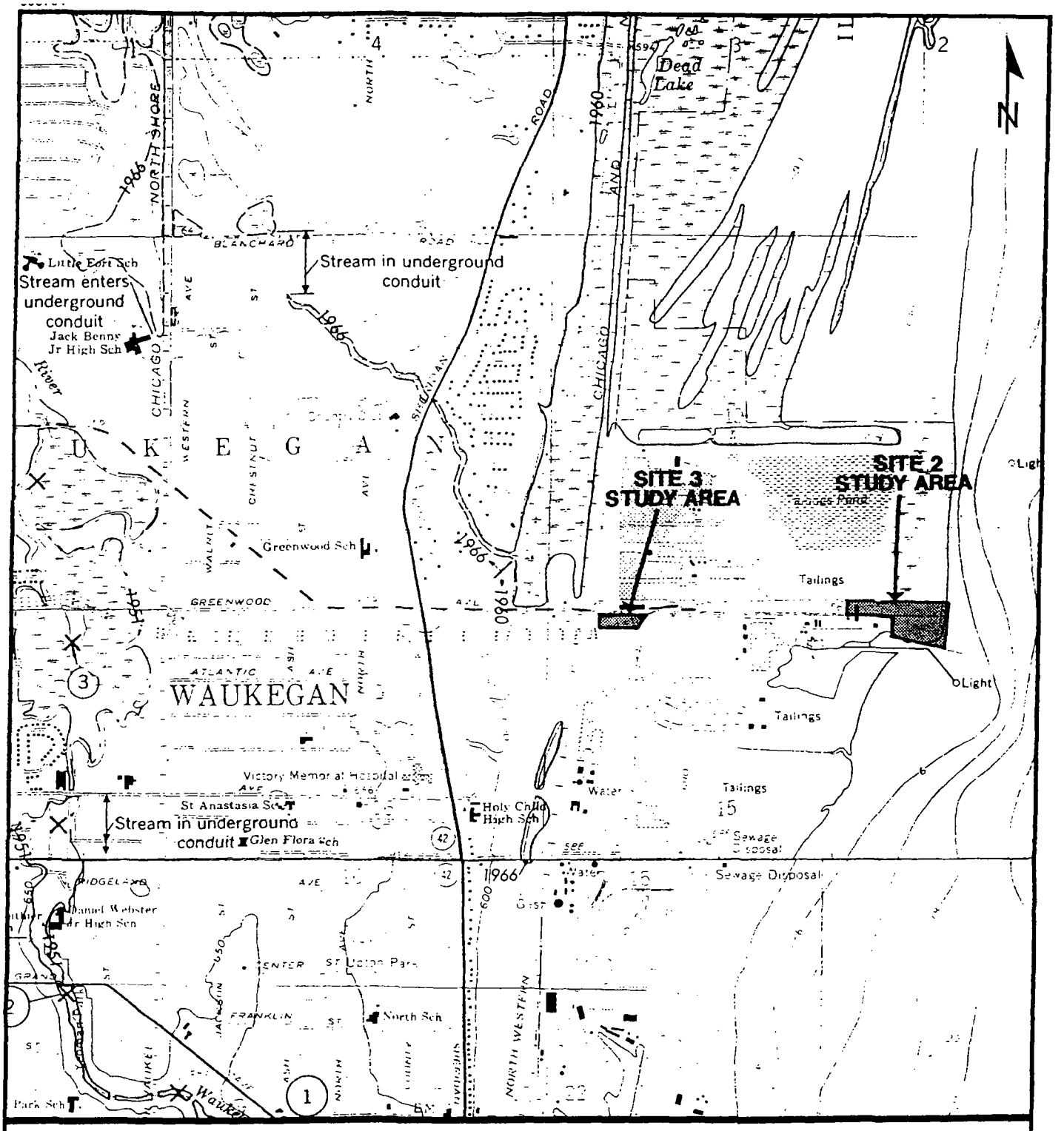
PROJECT No 99-364

TITLE NRCS WETLAND MAP

DATE 8/31/99

EXHIBIT 5

ROYAL BLUEPRINT COMPANY 608907



NOTE: TAKEN FROM THE HYDROLOGIC ATLAS, WAUKEGAN AND ZION QUADRANGLES(1967)

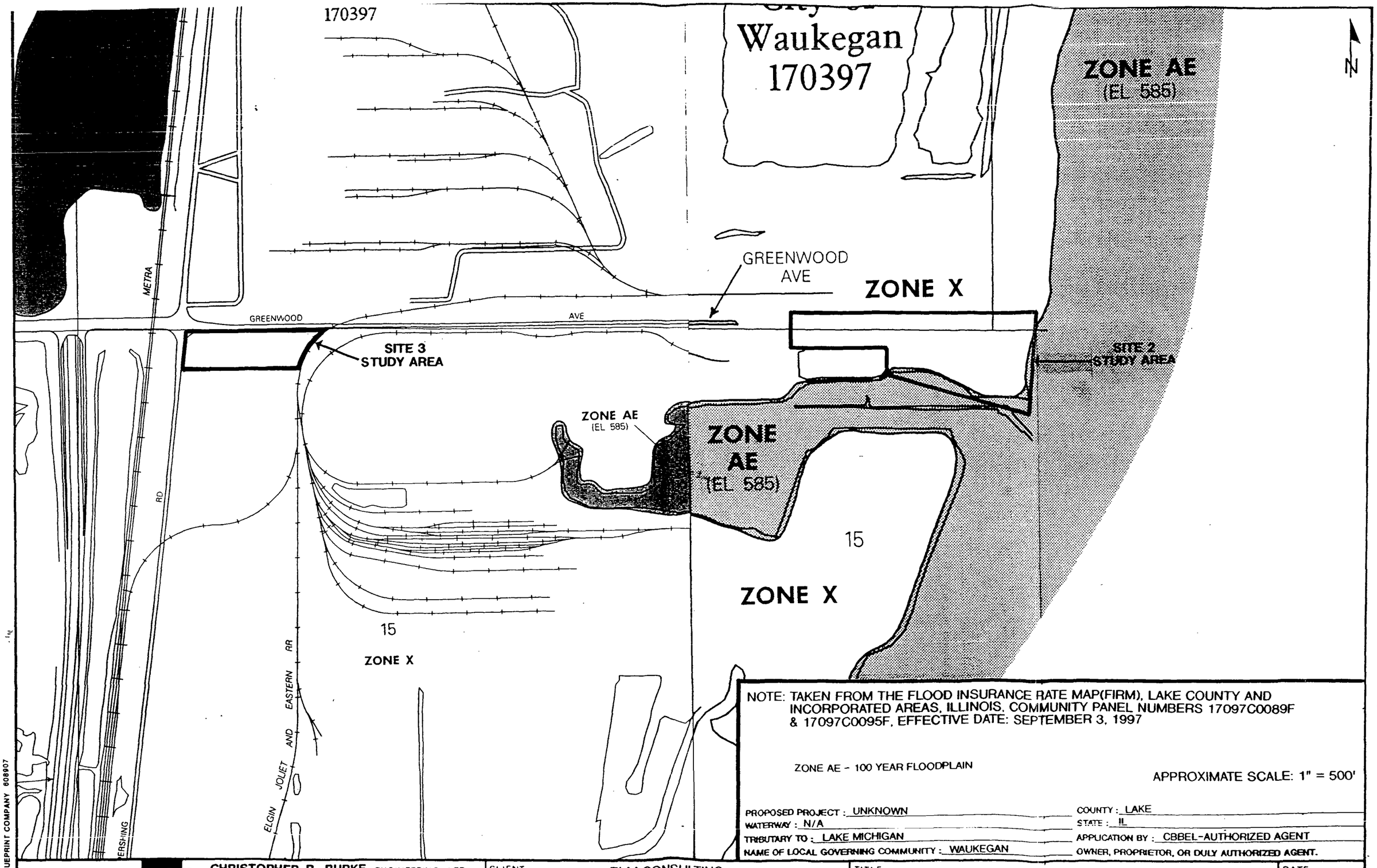
APPROXIMATE SCALE: 1" = 2000'

PROPOSED PROJECT : UNKNOWN	COUNTY : LAKE
WATERWAY : N/A	STATE : IL
TRIBUTARY TO : LAKE MICHIGAN	APPLICATION BY : CBBEL-AUTHORIZED AGENT
NAME OF LOCAL GOVERNING COMMUNITY : WAUKEGAN	OWNER, PROPRIETOR, OR DULY AUTHORIZED AGENT.

CHRISTOPHER B. BURKE ENGINEERING, LTD
9575 WEST HIGGINS ROAD SUITE 600
ROSEMONT, ILLINOIS 60018 (847) 823-0500

CLIENT	PROJECT No	
ELM CONSULTING	99-364	
TITLE		DATE 8/30/99
HYDROLOGIC ATLAS		EXHIBIT 6

ROYAL BLUEPRINT COMPANY



NOTE: TAKEN FROM THE FLOOD INSURANCE RATE MAP(FIRM), LAKE COUNTY AND INCORPORATED AREAS, ILLINOIS, COMMUNITY PANEL NUMBERS 17097C0089F & 17097C0095F, EFFECTIVE DATE: SEPTEMBER 3, 1997

ZONE AE - 100 YEAR FLOODPLAIN

APPROXIMATE SCALE: 1" = 500'

PROPOSED PROJECT : UNKNOWN
COUNTY : LAKE
WATERWAY : N/A
STATE : IL
TRIBUTARY TO : LAKE MICHIGAN
APPLICATION BY : CBBEL-AUTHORIZED AGENT
NAME OF LOCAL GOVERNING COMMUNITY : WAUKEGAN
OWNER, PROPRIETOR, OR DULY AUTHORIZED AGENT.

APPROVED

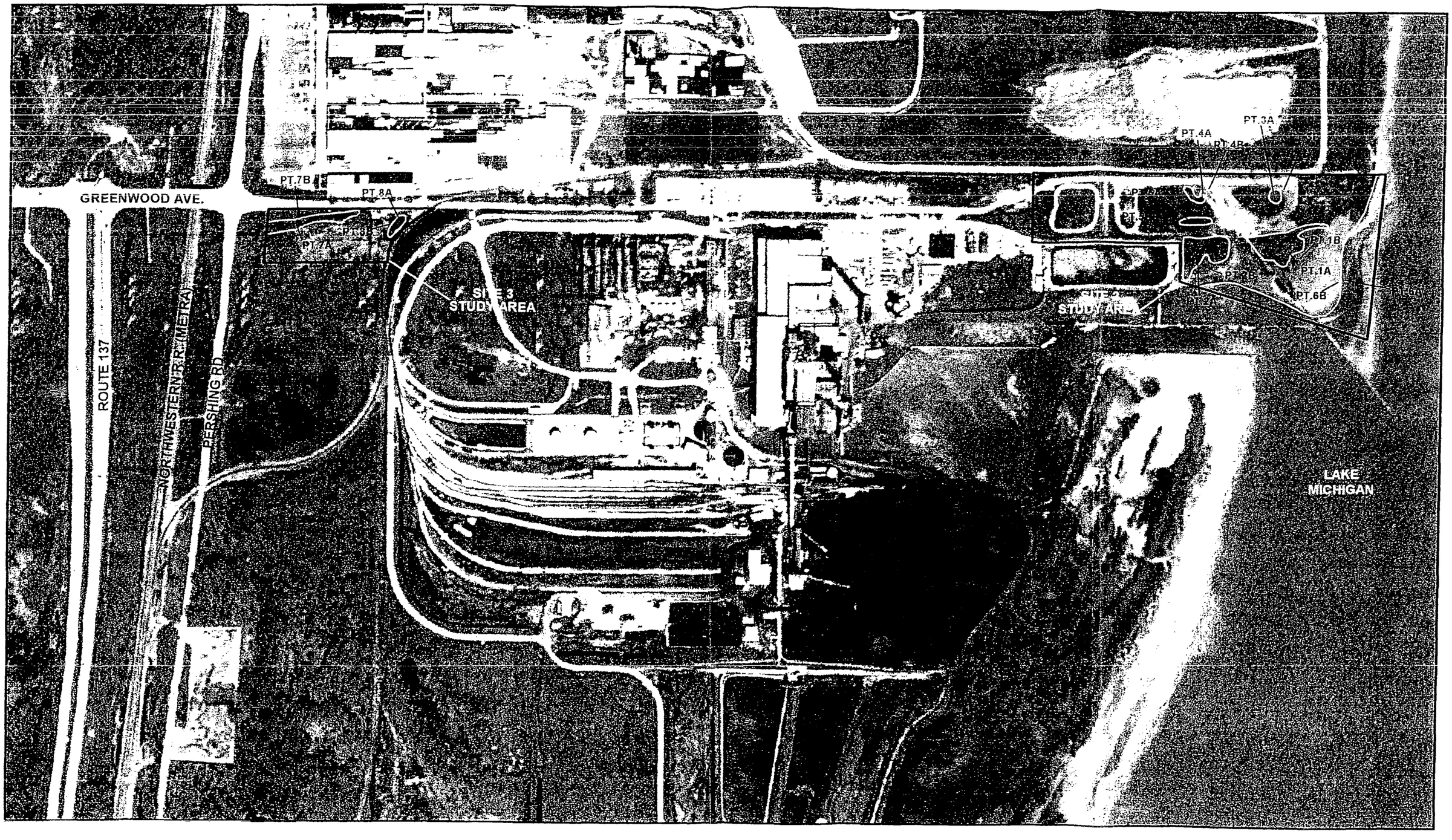
CHRISTOPHER B. BURKE ENGINEERING, LTD
9575 WEST HIGGINS ROAD SUITE 600
ROSEMONT, ILLINOIS 60018 (847) 823-0500

CLIENT: ELM CONSULTING
PROJECT No. 99-364

TITLE: FIRM

DATE 8/30/99
EXHIBIT 7

ROYAL BLUEPRINT COMPANY 808907



Christopher B. Burke Engineering, Ltd.
9575 West Higgins Road, Suite 600
Rosemont, IL 60018
PH. (847) 823-0500 / FAX (847) 823-0520

CLIENT:	PROJECT #	DATE:	
ELM CONSULTING	99-364	8/31/99	EXHIBIT 8
TITLE: APPROXIMATE WETLAND DELINEATION		NOTE: AERIAL PHOTOGRAPH TAKEN MAY 1998.	

NORTH

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 1

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Wetland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.1A
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	**Field Location:**

VEGETATION **(USFWS Region No. 3)**

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Salix interior Sandbar Willow	Shrub	OBL	*Populus deltoides* Cotton-Wood,Eastern	Tree	FAC+
Cornus racemosa Gray Dogwood	Shrub	FACW-			

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 3/3 = 100.00%	**FAC Neutral:** 2/2 = 100.00% **Numeric Index:** 6/3 = 2.00

Remarks:
>50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water:	N/A *(in.)*
Depth to Free Water in Pit:	N/A *(in.)*
Depth to Saturated Soil:	+/- 4 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- YES **Saturated in Upper 12 Inches**
- YES **Water Marks**
- YES **Drift Lines**
- YES **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- YES **Oxidized Root Channels in Upper 12 Inches**
- YES **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- YES **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
EVIDENCE OF REPEATED INUNDATION AND SATURATION

WetForm[tm]

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 1

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): *N/A* **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-16	A/B	10YR4/1	N/A	N/A	N/A	Sandy clay, Mod fine granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO *Aquic Moisture Regime*
- YES Reducing Conditions
- YES Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO *Listed on Local Hydric Soils List*
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
LOW CHROMA SOIL WITH STREAKING

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	Is the Sampling Point within the Wetland? (Yes) No
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

Remarks:
ALL CRITERIA ARE MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 9

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Upland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.1B
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	**Field Location:**

VEGETATION (USFWS Region No. 3)

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Ammophila breviligulata Beachgrass,American	Herb	UPL*	*Trifolium hybridum* Clover,Alsike	Herb	FAC-

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 0/2 = 0.00%

FAC Neutral: 0/1 = 0.00%
Numeric Index: 8/2 = 4.00

Remarks:
<50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water:	N/A *(in.)*
Depth to Free Water in Pit:	> 21 *(in.)*
Depth to Saturated Soil:	> 21 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- NO **Saturated in Upper 12 Inches**
- NO **Water Marks**
- NO **Drift Lines**
- NO **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- NO **Oxidized Root Channels in Upper 12 Inches**
- NO **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- NO **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
WELL DRAINED BEACH SAND

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 9

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-21	NA	10YR6/4	N/A	N/A	N/A	Sand, Granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
NO HYDRIC SOIL CHARACTEERISTICS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No)	Is the Sampling Point within the Wetland? Yes (No)	
Wetland Hydrology Present? Yes (No)		
Hydric Soils Present? Yes (No)		

Remarks:
ALL CRITERIA ARE NOT MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 2

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Wetland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.2A
Is the area a potential Problem Area?	Yes (No)	**Field Location:**
(If needed, explain on the reverse side)		

VEGETATION (USFWS Region No. 3)

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Cornus racemosa Dogwood, Gray	Shrub	FACW-	*Populus deltoides* Cotton-Wood,Eastern	Tree	FAC+

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 2/2 = 100.00%	**FAC Neutral:** 1/1 = 100.00% **Numeric Index:** 5/2 = 2.50

Remarks:
>50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water:	N/A *(in.)*
Depth to Free Water in Pit:	N/A *(in.)*
Depth to Saturated Soil:	+/- 8 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- YES **Saturated in Upper 12 Inches**
- YES **Water Marks**
- YES **Drift Lines**
- YES **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- YES **Oxidized Root Channels in Upper 12 Inches**
- NO **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- YES **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
EVIDENCE OF REPEATED INUNDATION AND SATURATION

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 2

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-13	A/B	10YR3/1	N/A	N/A	N/A	Silty clay, Granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- YES Reducing Conditions
- YES Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
LOW CHROMA SOIL

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	Is the Sampling Point within the Wetland? (Yes) No
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

Remarks:
ALL CRITERIA ARE MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 10

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Upland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.2B
Is the area a potential Problem Area?	Yes (No)	**Field Location:**
(If needed, explain on the reverse side)		

VEGETATION **(USFWS Region No. 3)**

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Daucus carota Queen Anne's Lace	Herb	UPL	*Solidago altissima* Golden-Rod,Tall	Herb	FACU

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 0/2 = 0.00%	**FAC Neutral:** 0/2 = 0.00% **Numeric Index:** 9/2 = 4.50

Remarks:
<50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**	**Wetland Hydrology Indicators**
N/A **Stream, Lake or Tide Gauge**	**Primary Indicators**
N/A **Aerial Photographs**	NO **Inundated**
N/A **Other**	NO **Saturated in Upper 12 Inches**
YES **No Recorded Data**	NO **Water Marks**
	NO **Drift Lines**
Field Observations	NO **Sediment Deposits**
	NO **Drainage Patterns in Wetlands**
Depth of Surface Water: N/A *(in.)*	**Secondary Indicators**
Depth to Free Water in Pit: > 21 *(in.)*	NO **Oxidized Root Channels in Upper 12 Inches**
Depth to Saturated Soil: > 21 *(in.)*	NO **Water-Stained Leaves**
	NO **Local Soil Survey Data**
	NO **FAC-Neutral Test**
	NO **Other(Explain in Remarks)**

Remarks:
WELL DRAINED SAND

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 10

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-21	NA	10YR6/4	N/A	N/A	N/A	Sand, Granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
NO HYDRIC SOIL CHARACTERISTICS

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	Is the Sampling Point within the Wetland? Yes (No)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

Remarks:
ALL CRITERIA ARE NOT MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: *Thomas McArdle John Lingle*		**State:** *Illinois*
		Plot ID: 3

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Wetland
Is the site significantly disturbed (Atypical Situation)?	(Yes) No	**Transect ID:** PT.3A
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	***Field Location:***

VEGETATION **(USFWS Region No. 3)**

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Typha angustifolia Cattail,Narrow-Leaf	Herb	OBL	*Echinochloa crusgalli* Grass,Barnyard	Herb	FACW

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 2/2 = 100.00%

FAC Neutral: 2/2 = 100.00%
Numeric Index: 3/2 = 1.50

Remarks:
>50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water:	N/A *(in.)*
Depth to Free Water in Pit:	N/A *(in.)*
Depth to Saturated Soil:	+/- 2 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- YES **Saturated in Upper 12 Inches**
- YES **Water Marks**
- YES **Drift Lines**
- YES **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- YES **Oxidized Root Channels in Upper 12 Inches**
- NO **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- YES **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
EVIDENCE OF REPEATED INUNDATION AND SATURATION

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 3

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** (Yes) No
Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-12	NA	10YR4/4	N/A	N/A	N/A	Silty clay, Many stones and cobbles

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
STRIPPED TOPSOIL. INUNDATION AND HYDROPHYTES INDICATE ANAEROBIC CONDITIONS ARE PRESENT

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	Is the Sampling Point within the Wetland? (Yes) No
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	Yes (No)	

Remarks:
ATYPICAL SITUATION. POSITIVE WETLAND HYDROLOGY AND DOMINANCE OF HYDROPHYTES INDICATE PRESENCE OF ANAEROBIC CONDITIONS

Explanation for response to: Normal Circumstances? Atypical Situation ? Potential Problem Area ?
PAST GRADING WITH POOR DRAINAGE

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999	
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake	
Investigators: Thomas McArdle John Lingle		**State:** Illinois	
		Plot ID: 11	

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Upland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.3B
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	**Field Location:**

VEGETATION **(USFWS Region No. 3)**

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Daucus carota Queen Anne's Lace	Herb	UPL	*Solidago altissima* Golden-Rod,Tall	Herb	FACU
Trifolium hybridum Clover,Alsike	Herb	FAC-			

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 0/3 = 0.00%	**FAC Neutral:** 0/2 = 0.00% **Numeric Index:** 12/3 = 4.00

Remarks:
<50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A *Stream, Lake or Tide Gauge*
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water:	N/A *(in.)*
Depth to Free Water in Pit:	> 21 *(in.)*
Depth to Saturated Soil:	> 21 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- NO **Saturated in Upper 12 Inches**
- NO **Water Marks**
- NO **Drift Lines**
- NO **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- NO **Oxidized Root Channels in Upper 12 Inches**
- NO **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- NO **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
NO EVIDENCE OFWETLAND HYDROLOGY

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 11

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** Yes (circled) No
Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-14	NA	10YR5/3	N/A	N/A	N/A	Silt loam, Mod fine granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
NO HYDRIC SOIL CHARACTERISTICS

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	Is the Sampling Point within the Wetland? Yes (No)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

Remarks:
ALL CRITERIA ARE NOT MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 4

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Wetland
Is the site significantly disturbed (Atypical Situation:)?	(Yes) No	**Transect ID:** PT.4A
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	**Field Location:**

VEGETATION **(USFWS Region No. 3)**

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Typha angustifolia Cattail,Narrow-Leaf	Herb	OBL	*Panicum virgatum* Switchgrass	Herb	FAC+

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 2/2 = 100.00%

FAC Neutral: 1/1 = 100.00%
Numeric Index: 4/2 = 2.00

Remarks:
>50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water: N/A *(in.)*

Depth to Free Water in Pit: N/A *(in.)*

Depth to Saturated Soil: +/- 4 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- YES **Saturated in Upper 12 Inches**
- YES **Water Marks**
- YES **Drift Lines**
- YES **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- YES **Oxidized Root Channels in Upper 12 Inches**
- YES **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- YES **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
EVIDENCE OF REPEATED INUNDATION AND SATURATION

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 4

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** (Yes) No
Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-13	NA	10YR4/4	N/A	N/A	N/A	Silt loam, Mod fine granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
STRIPPED TOPSOIL. POSITIVE WETLAND HYDROLOGY AND HYDROPHYTES INDICATE ANAEROBIC CONDITIONS ARE PRESENT

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No	Is the Sampling Point within the Wetland? (Yes) No	
Wetland Hydrology Present? (Yes) No		
Hydric Soils Present? Yes (No)		

Remarks:
ATYPICAL SITUATION. POSITIVE WETLAND HYDROLOGY AND A DOMINANCE OF HYDROPHYTES INDICATE THE PRESENCE OF ANAEROBIC CONDITIONS

Explanation for response to: Normal Circumstances? Atypical Situation ? Potential Problem Area ?
PAST GRADING WITH POOR DRAINAGE

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 12

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Upland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.4B
Is the area a potential Problem Area?	Yes (No)	**Field Location:**
(If needed, explain on the reverse side)		

VEGETATION (USFWS Region No. 3)

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Trifolium hybridum Clover,Alsike	Herb	FAC-	*Solidago altissima* Golden-Rod,Tall	Herb	FACU

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 0/2 = 0.00%	**FAC Neutral:** 0/1 = 0.00%
	Numeric Index: 7/2 = 3.50

Remarks:
>50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**	**Wetland Hydrology Indicators**
N/A **Stream, Lake or Tide Gauge**	**Primary Indicators**
N/A **Aerial Photographs**	NO **Inundated**
N/A **Other**	NO **Saturated in Upper 12 Inches**
YES **No Recorded Data**	NO **Water Marks**
	NO **Drift Lines**
Field Observations	NO **Sediment Deposits**
	NO **Drainage Patterns in Wetlands**
Depth of Surface Water: N/A *(in.)*	**Secondary Indicators**
	NO **Oxidized Root Channels in Upper 12 Inches**
Depth to Free Water in Pit: > 21 *(in.)*	NO **Water-Stained Leaves**
	NO **Local Soil Survey Data**
Depth to Saturated Soil: > 21 *(in.)*	NO **FAC-Neutral Test**
	NO **Other(Explain in Remarks)**

Remarks:
NO EVIDENCE OF WETLAND HYDROLOGY

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 12

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-15	NA	10YR5/3	N/A	N/A	N/A	Silt loam, Mod fine granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
NO HYDRIC SOIL CHARACTERISTICS

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	Is the Sampling Point within the Wetland? Yes (No)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

Remarks:
ALL CRITERIA ARE NOT MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 5

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Wetland
Is the site significantly disturbed (Atypical Situation:)?	(Yes) No	**Transect ID:** PT.5A
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	**Field Location:**

VEGETATION (USFWS Region No. 3)

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Lythrum salicaria Loosestrife,Purple	Herb	OBL	*Typha angustifolia* Cattail,Narrow-Leaf	Herb	OBL

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 2/2 = 100.00%

FAC Neutral: 2/2 = 100.00%
Numeric Index: 2/2 = 1.00

Remarks:
>50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A *Stream, Lake or Tide Gauge*
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water: N/A *(in.)*

Depth to Free Water in Pit: N/A *(in.)*

Depth to Saturated Soil: +/- 1 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- YES **Saturated in Upper 12 Inches**
- YES **Water Marks**
- YES **Drift Lines**
- YES **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- YES **Oxidized Root Channels in Upper 12 Inches**
- YES **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- YES **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
EVIDENCE OF REPEATED INUNDATION AND SATURATION

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 5

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** (Yes) No
Profile Description

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-12	NA	10YR4/4	N/A	N/A	N/A	Silt loam, Mod fine granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
STRIPPED TOPSOIL. SATURATION AND HYDROPHYTES INDICATE ANAEROBIC CONDITIONS ARE PRESENT

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	Is the Sampling Point within the Wetland? (Yes) No
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	Yes (No)	

Remarks:
ATYPICAL SITUATION. POSITIVE WETLAND HYDROLOGY AND DOMINANCE OF HYDROPHYTES INDICATES THE PRESENCE OF ANAEROBIC CONDITIONS

Explanation for response to: Normal Circumstances? Atypical Situation ? Potential Problem Area ?
PAST GRADING WITH POOR DRAINAGE

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 13

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Upland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.5B
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	**Field Location:**

VEGETATION (USFWS Region No. 3)

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Trifolium hybridum Clover,Alsike	Herb	FAC-	*Solidago altissima* Golden-Rod,Tall	Herb	FACU

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 0/2 = 0.00%

FAC Neutral: 0/1 = 0.00%
Numeric Index: 7/2 = 3.50

Remarks:
<50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water: N/A *(in.)*

Depth to Free Water in Pit: > 21 *(in.)*

Depth to Saturated Soil: > 21 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- NO **Saturated in Upper 12 Inches**
- NO **Water Marks**
- NO **Drift Lines**
- NO **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- NO **Oxidized Root Channels in Upper 12 Inches**
- NO **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- NO **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
NO WETLAND HYDROLOGY PRESENT

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: *Waukegan*	Project No: 99-364	Date: 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		County: Lake
Investigators: Thomas McArdle John Lingle		State: Illinois
		Plot ID: 13

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML Drainage Class: N/A
Taxonomy (Subgroup): N/A
Mapped Hydric Inclusion?
Field Observations Confirm Mapped Type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-15	NA	10YR5/3	N/A	N/A	N/A	Silt loam, Mod fine granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
NO HYDRIC SOIL CHARACTERISTICS

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	Is the Sampling Point within the Wetland? Yes (No)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

Remarks:
ALL CRITERIA ARE NOT MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 6

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** "Waters of the U.S."
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.6A
Is the area a potential Problem Area?	Yes (No)	**Field Location:**
(If needed, explain on the reverse side)		

VEGETATION (USFWS Region No. 3)

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 0/0 = 0.00%	**FAC Neutral:** 0/0 = 0.00% **Numeric Index:** 0/0 = 0.00

Remarks:
BEACHFRONT WITH NO VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**	**Wetland Hydrology Indicators**
N/A **Stream, Lake or Tide Gauge**	**Primary Indicators**
N/A **Aerial Photographs**	NO **Inundated**
N/A **Other**	YES **Saturated in Upper 12 Inches**
YES **No Recorded Data**	YES **Water Marks**
	YES **Drift Lines**
Field Observations	YES **Sediment Deposits**
	NO **Drainage Patterns in Wetlands**
Depth of Surface Water: N/A *(in.)*	**Secondary Indicators**
	NO **Oxidized Root Channels in Upper 12 Inches**
Depth to Free Water in Pit: N/A *(in.)*	NO **Water-Stained Leaves**
	NO **Local Soil Survey Data**
Depth to Saturated Soil: +/- 10 *(in.)*	NO **FAC-Neutral Test**
	NO **Other(Explain in Remarks)**

Remarks:
EVIDENCE OF REPEATED INUNDATION AND SATURATION

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 6

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-21	NA	10YR6/4	N/A	N/A	N/A	Sand, Granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
BEACH SAND WITH NO HYDRIC SOIL CHARACTERISTICS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No)	Is the Sampling Point within the Wetland? Yes (No)
Wetland Hydrology Present? (Yes) No	
Hydric Soils Present? Yes (No)	

Remarks:
JURISDICTIONAL "WATERS OF THE U.S." BEACHFRONT

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 14

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Upland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.6B
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	**Field Location:**

VEGETATION (USFWS Region No. 3)

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Trifolium hybridum Clover,Alsike	Herb	FAC-	*Solidago altissima* Golden-Rod,Tall	Herb	FACU

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 0/2 = 0.00%

FAC Neutral: 0/1 = 0.00%
Numeric Index: 7/2 = 3.50

Remarks:
<50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water: N/A *(in.)*

Depth to Free Water in Pit: > 21 *(in.)*

Depth to Saturated Soil: > 21 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- NO **Saturated in Upper 12 Inches**
- NO **Water Marks**
- NO **Drift Lines**
- NO **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- NO **Oxidized Root Channels in Upper 12 Inches**
- NO **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- NO **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
NO WETLAND HYDROLOGY PRESENT

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 14

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-21	NA	10YR6/4	N/A	N/A	N/A	Sand, Granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
NO HYDRIC SOIL CHARACTERISTICS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No)	Is the Sampling Point within the Wetland? Yes (No)	
Wetland Hydrology Present? Yes (No)		
Hydric Soils Present? Yes (No)		

Remarks:
ALL CRITERIA ARE NOT MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 7

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Wetland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.7A
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	**Field Location:**

VEGETATION (USFWS Region No. 3)

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Andropogon gerardii Bluestem,Big	Herb	FAC-	*Typha angustifolia* Cattail,Narrow-Leaf	Herb	OBL
Lythrum salicaria Loosestrife,Purple	Herb	OBL	*Phalaris arundinacea* Grass,Reed Canary	Herb	FACW+

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 3/4 = 75.00%

FAC Neutral: 3/3 = 100.00%

Numeric Index: 7/4 = 1.75

Remarks:
>50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO Recorded Data(Describe in Remarks):
- N/A Stream, Lake or Tide Gauge
- N/A Aerial Photographs
- N/A Other

YES No Recorded Data

Field Observations

Depth of Surface Water:	N/A *(in.)*
Depth to Free Water in Pit:	N/A *(in.)*
Depth to Saturated Soil:	+/- 6 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO Inundated
- YES Saturated in Upper 12 Inches
- YES Water Marks
- YES Drift Lines
- YES Sediment Deposits
- NO Drainage Patterns in Wetlands

Secondary Indicators
- YES Oxidized Root Channels in Upper 12 Inches
- YES Water-Stained Leaves
- NO Local Soil Survey Data
- YES FAC-Neutral Test
- NO Other(Explain in Remarks)

Remarks:
EVIDENCE OF REPEATED INUNDATION AND SATURATION

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 7

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-12	A/B	10YR3/1	N/A	N/A	N/A	Silt loam, Mod fine granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- YES Reducing Conditions
- YES Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
LOW CHROMA SOIL

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No	Is the Sampling Point within the Wetland? (Yes) No	
Wetland Hydrology Present? (Yes) No		
Hydric Soils Present? (Yes) No		

Remarks:
ALL CRITERIA ARE MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 15

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Upland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.7B
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	**Field Location:**

VEGETATION (USFWS Region No. 3)

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Solidago altissima Golden-Rod,Tall	Herb	FACU	*Andropogon gerardii* Bluestem,Big	Herb	FAC-

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 0/2 = 0.00%

FAC Neutral: 0/1 = 0.00%
Numeric Index: 7/2 = 3.50

Remarks:
<50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water: N/A *(in.)*

Depth to Free Water in Pit: > 21 *(in.)*

Depth to Saturated Soil: > 21 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- NO **Saturated in Upper 12 Inches**
- NO **Water Marks**
- NO **Drift Lines**
- NO **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- NO **Oxidized Root Channels in Upper 12 Inches**
- NO **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- NO **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
NO WETLAND HYDROLOGY

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 15

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-13	NA	10YR5/3	N/A	N/A	N/A	Silt loam, Mod fine granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
NO HYDRIC SOIL CHARACTERISTICS

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	Is the Sampling Point within the Wetland? Yes (No)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

Remarks:
ALL CRITERIA ARE NOT MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 8

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Wetland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.8A
Is the area a potential Problem Area?	Yes (No)	**Field Location:**
(If needed, explain on the reverse side)		

VEGETATION **(USFWS Region No. 3)**

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Lythrum salicaria Loosestrife,Purple	Herb	OBL	*Eleochans erythropoda* Spikerush, Red-Rooted	Herb	OBL
Typha angustifolia Cattail,Narrow-Leaf	Herb	OBL			

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 3/3 = 100.00%	**FAC Neutral:** 3/3 = 100.00% **Numeric Index:** 3/3 = 1.00

Remarks:
>50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water: N/A *(in.)*

Depth to Free Water in Pit: N/A *(in.)*

Depth to Saturated Soil: +/- 4 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- YES **Saturated in Upper 12 Inches**
- YES **Water Marks**
- YES **Drift Lines**
- YES ***Sediment Deposits***
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- YES **Oxidized Root Channels in Upper 12 Inches**
- YES **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- YES **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
EVIDENCE OF REPEATED INUNDATION AND SATURATION

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 8

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-12	A/B	10YR3/1	N/A	N/A	N/A	Silt loam, Mod fine granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- YES Reducing Conditions
- YES Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
LOW CHROMA SOIL

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	Is the Sampling Point within the Wetland?	(Yes) No
Wetland Hydrology Present?	(Yes) No		
Hydric Soils Present?	(Yes) No		

Remarks:
ALL CRITERIA ARE MET

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	**Project No:** 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 16

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** Upland
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:** PT.8B
Is the area a potential Problem Area? (If needed, explain on the reverse side)	Yes (No)	**Field Location:**

VEGETATION (USFWS Region No. 3)

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Andropogon gerardii Bluestem,Big	Herb	FAC-	*Trifolium hybridum* Clover,Alsike	Herb	FAC-

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 0/2 = 0.00%

FAC Neutral: 0/0 = 0.00%
Numeric Index: 6/2 = 3.00

Remarks:
<50% HYDROPHYTIC VEGETATION

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water:	N/A *(in.)*
Depth to Free Water in Pit:	> 21 *(in.)*
Depth to Saturated Soil:	> 21 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- NO **Saturated in Upper 12 Inches**
- NO **Water Marks**
- NO **Drift Lines**
- NO **Sediment Deposits**
- NO **Drainage Patterns in Wetlands**

Secondary Indicators
- NO **Oxidized Root Channels in Upper 12 Inches**
- NO **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- NO **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:
NO WETLAND HYDROLOGY PRESENT

WetForm™

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Waukegan	Project No: 99-364	**Date:** 1-Sep-1999
Applicant/Owner: ELM Consulting, L.L.C.		**County:** Lake
Investigators: Thomas McArdle John Lingle		**State:** Illinois
		Plot ID: 16

SOILS

Map Unit Name (Series and Phase): Made Land
Map Symbol: ML **Drainage Class:** N/A **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): N/A **Field Observations Confirm Mapped Type?** (Yes) No

Profile Description

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-15	N/A	10YR5/3	N/A	N/A	N/A	Silt loam, Mod fine granular

Hydric Soil Indicators:

- NO Histosol
- NO Histic Epipedon
- NO Sulfidic Odor
- NO Aquic Moisture Regime
- NO Reducing Conditions
- NO Gleyed or Low Chroma Colors
- NO Concretions
- NO High Organic Content in Surface Layer in Sandy Soils
- NO Organic Streaking in Sandy Soils
- NO Listed on Local Hydric Soils List
- NO Listed on National Hydric Soils List
- NO Other (Explain in Remarks)

Remarks:
NO HYDRIC SOIL CHARACTERISTICS

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	Is the Sampling Point within the Wetland? Yes (No)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

Remarks:
ALL CRITERIA ARE NOT MET

WetForm™