REMEDIAL INVESTIGATION REPORT - PHASE I
FOR THE
FORMER GRIESS-PFLEGER TANNERY SITE
WAUKEGAN, ILLINOIS

VOLUME 1 OF 3

9912700000359

RECEIVED
APR 04 1994
IEPA/DLPC

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MARCH 1994

ORIGINAL

EXHIBIT
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EXECUTIVE SUMMARY

The former Griess-Pfleger Tannery is located on the northeast corner of Sand (Pershing) and Dahringer Road. The property is approximately 38 acres and is bordered by Dahringer Road to the south, Elgin Joliet and Eastern Railroad on the east, a spur of the Chicago Northwestern railroad which conjoins with the Elgin Joliet and Eastern Railroad to the north, and Sand (Pershing) Road to the west. The property is currently owned by Commonwealth Edison Company.

The former Griess-Pfleger Tannery was established in 1917 and operated as a leather tanning facility until 1973. As evidenced from past analytical data, chrome tanning processes are believed to have been utilized. Chrome tanning, as generally practiced, consisted of nine basic steps and utilized a number of chemicals in the tanning process. The tanning process produced waste by-products in the form of gaseous reaction products, wastewater, wastewater sludge, and solid waste.

In January 1989, the U.S. Environmental Protection Agency's Field Investigation Team (FIT) performed a preliminary site investigation. Laboratory analyses indicated elevated levels of chromium and lead in the soil.

In June 1992, Commonwealth Edison contracted Metcalf & Eddy, Inc. to conduct a Remedial Investigation. The Remedial Investigation conducted at the former tannery was performed voluntarily in cooperation with the Illinois Environmental Protection Agency.

The primary objective of the Remedial Investigation was to characterize the potential environmental and health concerns at the site. The specific objectives included:

- Characterize the nature and extent of the environmental impact at the site with various media: surface water (cistern), groundwater, surface soil, subsurface soil, sediment, and production waste.
- Determine the aerial and vertical extent of the impacted areas.
- Supply data that will support a preliminary risk assessment and feasibility study.

Geologic, Hydrogeologic, and Geotechnical Characterization

To accomplish the above mentioned objectives, Metcalf & Eddy, Inc. performed various field activities in May and June 1993. These activities included collecting: eleven sediment samples, sixty-eight soil samples (forty-three subsurficial, fifteen surficial, and ten monitoring well soil boring samples), two geotechnical samples, nine production waste samples, one cistern water sample, and seven groundwater samples. Briefly, the data is summarized as follows:

- Based on the results of the site investigation, geology at the site consists of very dark grey-brown to black silty sand to sand. The sand particles ranged in size from very fine to coarse. Trace materials such as animal hair, peat, roots, and wood were also present in the subsurface soil.

- The geotechnical data indicated that the material was non-plastic and consisted predominantly of sand (58% - 81%).

- Groundwater at the former tannery is assumed to be under unconfined conditions. Saturated soil was typically found approximately four to seven feet below grade. Under static water conditions the groundwater flow direction is east to southeast. Hydraulic conductivity tests conducted at the site ranged from 2.55×10^{-3} cm/sec to 8.459×10^{-3} cm/sec. The hydraulic gradient at this site was calculated as 1.4×10^{-3} feet per foot, a relatively flat gradient.

- The regional geology of the area in northern Illinois is underlain by glacial drift deposits. The glacial drift is made up of glacial till, sands and gravels, and fine sediments. Beneath the glacial till are bedrock formations consisting of sandstones, shales, and dolomites.

- Groundwater is available from four main aquifer systems in the Chicago area: (1) the sand and gravel deposits of the glacial drift; (2) the shallow Silurian dolomites; (3) the Cambrian-Ordovician sandstones; and (4) the Cambrian Mt. Simon Sandstones and Eau Clair Formation.

Analytical Characterization

The soil and sediment samples were collected and analyzed for Target Compound List (TCL) volatile and semi-volatile organic compounds, TCL pesticides/PCBs, and Target Analyte List (TAL) inorganic compounds. The production waste samples were analyzed for TCL volatile and semi-volatile organic compounds, TCL pesticides/PCBs, Target Analyte List (TAL), and Toxicity Characteristic Leaching Procedure (TCLP) Compounds. The groundwater and cistern water samples were collected for the TCL volatile and semi-volatile organic compounds, TCL pesticides/PCBs, and TAL inorganic analytes in addition to Total Dissolved Solids (TDS). Results of sampling and analysis are summarized as follows:

- The recent Remedial Investigation performed by Metcalf & Eddy, Inc. has confirmed the January 1989 FIT investigation where elevated levels of chromium and lead were detected in the soil.

- Pesticides were detected in varying concentrations throughout the site. PCBs were also detected in the soil but were limited in their aerial extent.

- Base Neutral/Acid Extractable (BNA) compounds, consisting mostly of polynuclear aromatic hydrocarbons (PNAs), were detected sporadically throughout the site. These compounds were also present in background soil samples.

- In general, the trend of detected laboratory constituents tended to decrease with increasing depth throughout the soil strata; with the exception of PNAs, which either increased slightly or remained the same.

- Production Waste samples were collected to determine if any of the analytes exceeded the TCLP Regulatory Limits found in 40 CFR 261.24. Three of the samples exceeded the TCLP Regulatory Limits, two for chromium and one for lead.

- Groundwater samples were collected from all seven groundwater monitoring wells. The laboratory analyses indicated that the BNAs, pesticides/PCBs, and volatile organic compounds were not detected in any of the groundwater samples collected.

- Inorganic analytes, arsenic and lead, were detected in one monitoring well above the Illinois Class I Standards (IAC Title 35, Subpart D, Section 620.410(a) of 50 micrograms per liter (ug/l) and 7.5 ug/l, respectively.

- Other inorganic compounds, iron and manganese, were detected above the Illinois Class I Standards, 5,000 ug/l and 150 ug/l, respectively. Analytical results for the background sample indicated levels which exceeded the Illinois Class I Standard. Both iron and manganese are naturally occurring.

- Total Dissolved Solids were detected above the Illinois Class I Standard, 1,200 mg/l, in all seven monitoring wells. These levels are naturally occurring.

SECTION 1.0
INTRODUCTION

1.1 PURPOSE AND SCOPE OF REMEDIAL INVESTIGATION

The Field Sampling Plan (FSP) provided the rationale, location, and methods for data collection during the Remedial Investigation (RI) at the Former Griess-Pfleger Tannery Site (Former Tannery Site). The scope and contents of this plan are in accordance with the Illinois Hazardous Substances Pollution Contingency Plan, 35 Illinois Administrative Code 750, as amended, and the National Contingency Plan, 40 CFR, Part 300.

The objective of the FSP was to have a document which contained site-specific detail on the number, location, methods of collection, and processing of samples collected during the RI. The FSP was sufficient enough in detail to be taken to the field and followed for all aspects of data collection during the investigation. A Site Health and Safety Plan was prepared as part of the FSP.

Specific tasks that were conducted during the RI Site Investigation have been divided into subtasks. If additional data needs were identified during the first phase of the RI, appropriate changes were made in accordance with discussions between Commonwealth Edison, the Illinois Environmental Protection Agency (IEPA), and Metcalf & Eddy, Inc. (M&E) (e.g. monitoring well abandonment, additional production waste sampling, inability to obtain a cistern sediment sample). A summary of these subtasks is provided below.

Subtask 3.1: Magnetometry Survey - A magnetometry survey was conducted prior to initiating other intrusive sampling activities in an effort to locate buried drums. The survey was focused on Area IV, the Production Waste Disposal Area. The goal of the survey was to determine the location and the depth of drum deposition. The result of this investigation was used to identify subsequent soil sampling locations (i.e. to avoid puncturing of drums).

Subtask 3.2: Monitoring Well Installation/Closing - Seven ground-water monitoring wells were installed to assess the on-site and off-site water quality. Six shallow monitoring wells were installed on site and one monitoring well was installed off-site, north of the site, to assess upgradient groundwater quality. Each monitoring well was screened to intersect the top of the groundwater table. In-situ hydraulic conductivity testing was conducted on each well. Static water level measurements were also collected.

One monitoring well located in Area V was found abandoned in place. This well had not been installed by M&E. The well was removed because its integrity and construction were unknown.

Subtask 3.3: Sampling and Analysis - One round of surface soil, subsurface soil, groundwater, cistern (surface water), sediment, and production waste samples were collected and analyzed. Media samples collected during the RI were analyzed for the following parameters: Soil and sediment samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and pesticides/PCBs in addition to Target Analyte List (TAL) Inorganic compounds; production waste samples were analyzed for TCL VOCs, SVOCs, and pesticides/PCBs, TAL Inorganic Compounds, and Toxicity Characteristic Leaching Procedure (TCLP) parameters; cistern and groundwater samples were analyzed for TCL VOCs, SVOCs, and pesticides/PCBs; TAL Inorganic Compounds; and total dissolved solids (TDS).

1.2 REPORT ORGANIZATION

The RI report is divided into seven sections. The suggested RI Report format, as presented in the U.S. EPA RI/FS guidance document (U.S. EPA, 1988), was used in outlining the report as follows:

Section 1.0, Introduction: Provides a brief overview describing the site activities and work objectives.

Section 2.0, Site Background: Provides a detailed site history and background. Site background includes site description, site history, and a summary of previous investigations.

Section 3.0, Environmental Setting: Provides information regarding land use and surrounding population, climatology, surface waters, soils, topography, regional geology and stratigraphy, regional hydrogeology, and regional groundwater use.

Section 4.0, Environmental Investigations: Details the methods and techniques of the environmental investigation. Monitoring well and soil boring advancement techniques, groundwater, soil, sediment, and cistern sampling methods, and decontamination procedures are explained.

Section 5.0, Results and Discussion of Environmental Investigations: Site specific geology and hydrogeology are detailed.

Section 6.0, Nature and Extent of Environmental Impact: Describes the nature, extent, and magnitude, of environmental impact to the soil and groundwater.

Section 7.0, Summary, Conclusions, and Recommendations: Summarizes the findings and presents recommendations.

Section 8.0, References

SECTION 2.0
SITE BACKGROUND

2.1 SITE DESCRIPTION

On October 15, 1973, Commonwealth Edison Company (CECo) purchased the 38-acre site from Beggs & Cobbs, Inc. of Boston, Massachusetts. This property is located adjacent to CECo's 240-acre Power Generation facility. The former tannery is located at the northeast corner of Sand (Pershing) and Dahringer Road in Lake County, Waukegan, Illinois. More specifically, the site is located in the northwest quarter of the southwest quarter of Section 15, Township 45 North, Range 12 East of the Third Principal Meridian in Lake County. Refer to Figure 2-1 for the site location.

2.2 SITE HISTORY

The Griess-Pfleger Tannery was built in 1917 and operated as a leather tanning facility from 1918 through 1973. Aerial photographs, Figures 2-2, 2-3, 2-4, and 2-5, illustrate the progression of the former tanning facility during the years 1939, 1959, 1964, and 1970, respectively. Shortly after the facility closed, a lacquer dust fire, which occurred on November 16, 1973, gutted several of the main structures. This fire was the last of several which had occurred throughout the tanning facility's operational history.

According to the Tannery Council of America, two tanning methods exist: chrome tanning and vegetable tanning. Past analytical data suggest that chromium tanning processes were utilized by the Griess-Pfleger Tannery. Chrome tanning consists of nine steps. Chemicals involved in the tannery process include: sodium sulfate, lime, diethylamine, sulfhydrate, cyanide salts, enzymes, ammonium sulfate or ammonium hydrate, sulfuric acid, sodium chloride, chrome liquor, sodium thiosulfate, and borax. The tanning process produced wastes from these chemicals in the form of gaseous reaction products, wastewater, sludge, and solid wastes.

In addition to impacts attributed to the tannery process, it is believed that a portion of the site may have been used as a dump site by third parties.

On December 2, 1988, Commonwealth Edison received notification from Ecology and Environment, a Field Investigation Team (FIT) contractor for the U.S. EPA, that the former tannery site was being considered as a candidate for placement on the National Priorities List (NPL). Subsequently, a preliminary site investigation was conducted on January 5, 1989 by FIT. Analytical data from the FIT investigation indicated elevated levels of chromium and lead in soil.

To facilitate the Remedial Investigation, the site was divided into six areas. Area I contained two unlined wastewater treatment process ponds. A wooden sluice is assumed to have directed water/sludge from the processing area to the two ponds. Area II, the former wastewater discharge area, contained two circular wastewater treatment structures. Area III contained the boiler house. Area IV, the production waste storage area, appears to have been the disposal area for general debris and drummed solid waste generated from production activities. Area V, the portion of the site leased to Falcon Marine Company, was used for winter storage of boats and recreational vehicles. Surficial evidence of dumping of miscellaneous material (marine batteries, heavy equipment tires, building materials, metal paint cans) was apparent in this area during previous site inspections. Area VI is the site of the former production facility. Within this area, a cistern and open sewer exist. A facility production well existed on site until it was sealed by Layne-Western, Inc. in 1991.

SECTION 3.0
ENVIRONMENTAL SETTING

3.1 LAND USE AND SURROUNDING POPULATION

Waukegan has a population of 69,392 (1990 U.S. Census) and is located along the densely populated Lake Michigan shoreline. The City of Waukegan has a large industrial base, predominantly situated along Lake Michigan. Residential and commercial areas are principally located in areas away from the lake. The former tannery's eastern boundary is immediately bordered by the Elgin Joliet and Eastern Railroad (EJ&E R.R.). The North Shore Sanitary Plant, Waukegan District, is located just east of the EJ&E R.R., and Lake Michigan is located approximately 0.75 miles east of the site. The CECo Power Generation Station is located to the northeast. To the north are several industrial buildings. The Illinois Beach State Park is located approximately one mile north of the former tannery. Dead Lake and Dead River are located within the Illinois State Beach Park. To the west are Sand Road (Pershing), Chicago and Northwestern Railroad (CNW R.R.), Amstuz Expressway, and various residential and commercial properties, respectively. The property's southern boundary is immediately bordered by Dahringer Road and various vacant and occupied industrial/commercial properties. Figure 3-1 illustrates the site location in relation to some of its boundaries.

3.2 CLIMATOLOGY

The site area is located in the temperate zone of the United States and has a great seasonal fluctuation in temperature. July and August are the warmest months of the year with mean daily temperatures of approximately 71°F. January is the coldest month with a mean daily temperature of approximately 20°F. Precipitation in the area averages 34.2 inches per year with snow prevalent from November to March. Annual evapotranspiration is approximately 25 inches (Sheaffer and Zeizel, 1966).

3.3 SURFACE WATERS

The major surface water bodies in the area of the site are Lake Michigan, Dead Lake, and Dead River. Several wetlands are also located in the vicinity of the former tanning facility.

Lake Michigan, located approximately 0.75 miles east of the site, is the potable water source for the City of Waukegan. The depth of Lake Michigan varies from approximately 12 to 25 feet within 1.5 miles of the shore. Lake Michigan's depth greatly increases farther from shore. The city's four water intakes are located in Lake Michigan approximately one mile south of the site and one mile into Lake Michigan. The intakes connect to an aqueduct which extend to a municipal pumping station located approximately one mile south of the former tannery site. Recreationally, Lake

Michigan is used for a wide variety of purposes and by a great number of people. The lake also provides habitat for numerous fish and animals.

Dead Lake and Dead River are both located north of the site. Dead River is situated within the boundaries of Illinois Beach State Park. Much of the park area is comprised of wetlands which are indigenous to the area. Dead Lake is located just west of the park border and is within a wetland area. The lake and river are used recreationally and provide habitat for a wide variety of flora and fauna. Also located in the state park are smaller lakes that are part of the wetland area.

According to the Lake County "Swampbuster Wetland Inventory (1990)", wetlands (including artificial wetlands - AW) are prevalent within and adjacent to the property boundaries. A wetland is an area with a high potential for exhibiting hydric soil with hydrophyllic vegetation. Figures 3-2 and 3-3 illustrate the noted Lake County wetlands.

3.4 SOILS

The general area where the site is located was constructed through lakefill deposition. The lakefill deposition sediments are categorized into two general soil associations: the Marsh-Fox-Boyer and the Zurich-Grays-Wauconda. According to the general soil map of Lake County, Illinois, the site is located in the Marsh-Fox-Boyer association. This soil can be described as having wet, marshy areas with level to rolling, well drained to moderately well drained soils that are moderately deep over sand and gravel and have rapid to moderate permeability. The area located west of the former tannery is known as the Zurich-Grays-Wauconda association. This association is known to have nearly level to moderately steep, well-drained to somewhat poorly drained deep soils that have moderate permeability (U.S.D.A, 1969). Figure 3-4 illustrates the general soil map for the former tanning facility and surrounding areas.

More specifically, the site and immediate surrounding areas are comprised of made-land (ML) soils. Figures 3-5 and 3-6 illustrate the soil type of the site and surrounding areas. Made-land soils have been removed or extensively reworked and are not classified as native soils. Since made-land soils can be formed in any location or under any condition, there are no typical properties of the made-land "soils". The soil material found at the site is generally silty sand to sand consisting predominantly of fine sands. A very thin layer of organic matter overlying peat and tannery wastes has been discovered in some on-site areas. Along the on-site former wastewater ponds, the sands of the unsaturated zone are overlain by a layer of clayey silt.

The areas adjacent to the site are comprised of made-lands and sands. The soils in Illinois Beach State Park have been classified as beach sands and Plainfield sands. As sands, these soils are extremely well-drained and do not retain much moisture. The Plainfield sands typically show an increase in calcium carbonate at depths of 2 to 3 feet. In the upland areas west of the site, the soil is dominated by sandy and silty calcareous loams.

3.5 TOPOGRAPHY AND DRAINAGE

The regional topography is relatively flat with glacial moraines and man-made features providing the only relief in the area. Elevation in the site area ranges from Lake Michigan level (approximately 580 feet above mean sea level [MSL]) to approximately 660 feet above MSL in the City of Waukegan (the neighborhoods are built on moraines). Site elevation varies only slightly and is approximately 590 feet above MSL.

The regional topography of the site area was formed by Wisconsin Age glaciation. During the Woodford stage of Wisconsin glaciation, Glacial Lake Chicago was formed. Lake Chicago covered most of the area of present-day Waukegan and several adjacent communities. Shallow and deep water deposits from Lake Chicago formed the unconsolidated materials in the areas directly north and west of the site. Glacial lake bed deposits (the lake plain) and remnants of a moraine constitute other definable Quaternary deposit features in the area of the site.

The site was not created through glacial deposition, but constructed as lakefill. The site and some areas south of the site were formed by engineered lakefill and were developed as industrial land immediately after the deposition of the fill materials. Typically, these lakefill areas are relatively flat.

The site and the surrounding areas are within the drainage basin of Lake Michigan. Surface waters exiting the site would eventually enter the lake. However, since the site is a lakefill without a cap and is essentially flat and grass covered, rain water would likely infiltrate into the sandy soils at the site and would not leave the site as runoff.

Dead River, Dead Lake, and the wetlands including the areas of Illinois Beach State Park act as a drainage area for areas north of the site. Man-made barriers (buildings, roads, etc.) prevent site surface water runoff from being carried to these areas.

3.6 REGIONAL GEOLOGY

The site area is composed of Wisconsin glaciation features. Glacial Lake Chicago covered the immediate area of the site. Surficial glacial materials in the site area were deposited by still-water deposition and by glacial movement.

The shore and shallower areas of Lake Chicago were originally located near the present-day Chicago & North Western railroad (CNW R.R.) located west of the site. After a period of glacial recession, these shallower areas were relocated eastward near the present-day beach areas of the Lake Michigan shoreline. Large-grained materials settled out of the lake waters and formed the lake bed. These deposits are dominated by sands with some silt and gravels. The sand deposits form the Dolton Member of the Equality Formation (Willman 1971). Dolton Member deposits are typically less than 18 feet thick in the site area (Berg and Kempton 1988).

Deep water was located east of the shore areas and moved eastward as the glaciers retreated. Prior to glacial retreat, smaller-grained materials settled out of this deep water area and the deposits formed the lake bed. In the area of the site the only evidence of the deeper water lake bed is the silt-dominated (predominantly sandy silt) deposits found in the region between the two Dolton Member deposits. These deposits are classified as the Carmi Member of the Equality Formation. Thin lenses of clay are sometimes present in the Carmi Member deposit. Presently, Carmi Member deposits are found directly north of the site (Willman 1971). Typically, the Carmi Member deposits are less than 18 feet thick (Berg and Kempton, 1988).

Other Quaternary surficial units mapped in the area of the site are the relatively flat lake plain deposits and the remnants of the Zion City Moraine. The lake plain unit was the bed of glacial Lake Chicago and is dominated by silts and clays. Lake plain deposits are found in the area west of the site and extend in a north-south direction. The Zion City Moraine remnants are three separate areas comprised of clayey and silty clayey till deposits with localized lenses of silt. The moraine deposits are classified as the Wadsworth Member of the Wedron Formation. In the area of the site, the Wadsworth Member is the surficial till of the Wedron Formation. There are relatively few pebbles and boulders in the Wadsworth Member (Willman, 1971).

The Wedron Formation underlies all surficial materials in the region, including the Carmi and Dolton Members. The Wedron Formation is found in sheet-like deposits that are typically separated by beds of gravel, sand, or silt that were deposited through movement of glacial waters (Willman, 1971). In the area of the site, the Wedron Formation is approximately 50 to 175 feet thick (Berg, Kempton, and Cartwright, 1984).

Underlying the unconsolidated till deposits is a series of Silurian dolomite units. The dolomite units are approximately 175 feet thick and are underlain by the Maquoketa Shale, which is approximately 150 feet thick in the area of the site. A series of Ordovician and Cambrian sandstone and dolomite (with few limestone) units underlies the shale and extends down to a Precambrian granite (Visocky, Sherrill, and Cartwright, 1985).

3.7 REGIONAL HYDROGEOLOGY

Four aquifers can be designated in the area of the site. The uppermost is the glacial drift aquifer, which is comprised of the Dolton sands, Carmi silts, and the underlying

Wedron Formation till. These unconsolidated deposits overlie the Silurian dolomites, which are considered the second aquifer in the area. Although no confining layer has been identified between the glacial deposits and the dolomite, the units have typically been considered separate aquifers (possibly due to the proximity of Lake Michigan as a discharge area and the effect of the till on the vertical migration of groundwater). The third aquifer of the area is the Midwest Bedrock Aquigroup (designated by Visocky, et al. [1985]) which consists of sandstone and dolomite units that underlie the Maquoketa Shale confining layer. The fourth aquifer is the Basal Bedrock Aquigroup. It consists of upper unit Eau Claire Formation shales and sandstones and the underlying Mount Simon sandstone (Visocky, et al. 1985).

The glacial drift deposits in the site area can be expected to produce wells with yields of approximately 100 gallons per minute (gpm). Singh and Adams (1980) estimated the range of potential yield for the aquifer located in Township 45 North, Range 12 East (the location of the site). This estimate included use of the Silurian dolomite as a groundwater source and was dependent upon the use of the unconsolidated materials or the dolomite as the primary groundwater source. The yield estimate ranged from 0.4 million gallons per day (mgd) to 0.9 mgd (Singh and Adams, 1980). Estimated hydraulic conductivity for the silty sands and sands present in the unconsolidated deposits range from 1×10^{-5} centimeters per second (cm/s) to 1×10^{-3} cm/s. The relatively high hydraulic conductivity of the surficial silty sands and sands increases the potential for contamination of the aquifer since contaminants can migrate through the deposit quickly (Berg, Kempton, and Cartwright, 1984).

Silurian dolomites in the area can be expected to produce yields of approximately 100 gpm (Singh and Adams, 1980). The Singh and Adams (1980) study also estimated potential yield of the dolomite aquifer as ranging from 0.5 to 0.7 mgd. Groundwater is typically found in joints, fissures, and solutional cavities in the dolomite. Localized regions of the dolomite may have greater areas of fissures and cavities and, thus, may have higher yields than estimated due to increased storage capacity. Since there are localized regions of greater capacity, the transmissivity and storage coefficient values for the dolomite are highly variable. Transmissivity may vary from approximately 10,000 to 85,000 gpd/ft. The value for storage coefficient may vary from approximately 9×10^{-5} to 3.5×10^{-4} (Visocky, et al. 1985).

The Midwest Bedrock Aquigroup has been greatly used as a groundwater source in the northern Illinois area. In the area of the site, the piezometric surface of the aquifer is at approximately 350 feet above MSL (Visocky, et al. 1985). Yields from this aquifer are much greater than from the other aquifers in the area. Yields can be expected to be greater than 500 gpm and may exceed 1,000 gpm in some areas (Singh and Adams, 1980). Transmissivity values in the aquigroup range from 10,000 to 20,000 gpd/ft. The average storage coefficient for the aquifer is approximately 3.9×10^{-4} (Visocky, et al. 1985). However, the aquigroup has been greatly dewatered in some areas of the northeastern Illinois region. This is due to the fact that the

Maquoketa Shale (a confining layer - aquitard) prevents groundwater from migrating downward and recharging the aquigroup. The recharge of the aquigroup is through horizontal migration from areas of northwestern Illinois where the shale is not present (Visocky, et al. 1985).

The Basal Bedrock Aquigroup has been used as a groundwater resource in northern Illinois, although most wells drilled into this formation are located far west and southwest of Waukegan. Transmissivity values for the aquifer range from approximately 1,000 to 10,500 gpd/ft. Storage coefficients range from 1.3×10^{-4} to 5.2×10^{-4} (Visocky, et al. 1985).

3.8 GROUNDWATER USE IN THE AREA

Groundwater in the area of the site is typically used for industrial production purposes. Potable water for residences and businesses is primarily supplied by the City of Waukegan water system, which treats water from Lake Michigan. However, according to the 1990 U.S. Census, there are approximately 1.4% of the residences within Waukegan using private wells to obtain potable water. Thus, an estimated 970 persons in Waukegan use private wells.

Information obtained from the Illinois State Water Survey (ISWS) listed eight private wells within one mile of the site, including two wells used for lawn watering at a country club. The nearest residential well (listed on a well log) is located approximately 0.6 miles west of the site and was installed in 1980. Two of the wells tap gravel beds within the Wedron formation (depths of 88 and 97 feet). The remaining logs list the dolomite as the groundwater source for the wells. Figure 3-7 illustrates the location of wells within a one-mile radius of the site.

ISWS information also included the log for a 1929 production well located on the former tannery site. This well, 1,670 feet deep, was open to the sandstones and other units of the Midwest Bedrock Aquigroup and the Basal Bedrock Aquigroup. The well was closed in 1991 by Layne-Western, Inc. The well log inventory is included as Appendix A.

SECTION 4.0
ENVIRONMENTAL INVESTIGATIONS

4.1 GEOLOGIC/HYDROGEOLOGIC INVESTIGATIONS

The environmental investigation conducted at the former tannery served as a means for assessing the vertical and lateral extent and magnitude of environmental impact. The advancement of soil borings and installation of monitoring wells; the closing of one monitoring well; the collection of production waste samples, soil and groundwater samples, and surface water and sediment samples; a magnetometer survey; slug tests; and a site-wide survey were used to characterize conditions at the former facility.

4.2 MAGNETOMETER SURVEY

4.2.1 Purpose

A magnetometry survey was conducted in Area IV, Production Waste Disposal Site Area, to locate areas of buried drums and other metal debris. The purpose of the survey was to define the aerial extent of drum deposition. The survey was performed prior to initiating intrusive soil boring sampling activities.

4.2.2 Location

Area IV, the Production Waste Disposal Site Area, was the primary focus of the magnetometry survey. The survey was initiated in this area because file information indicated the presence of buried drums and site reconnaissance observations confirmed the presence of drum remnants. Refer to Figure 4-1 for survey grid location.

4.2.3 Survey Methodology

A 325-foot x 300-foot magnetometry survey grid was established over the eastern portion of Area IV using a surveying transit. The south baseline of the grid was parallel to and 80 feet north of the fence at the south end of Area IV. The east baseline of the grid was perpendicular to the southeast corner of the fence. A theodolite was set up on the east baseline to accurately lay out the grid based on 25 foot centers for the magnetometer survey. Based on initial survey results and physical constraints, the grid point (station) spacing was expanded to further define areas of concern. The results indicated anomalies outside of or on the edge of the grid boundary, influencing the grid's final configuration.

A gradient proton procession magnetometer (gradiometer) was used to survey the area. The gradiometer measured the magnetic gradient at a specific location (survey station). The gradiometer was used because it was more capable of minimizing cultural noise (e.g. fences, buried building debris, powerlines). However, cultural noise was still significant at the site. The base station (neutral zone) was located in an on site area to obtain data that was as free from interference noise (fences, power lines) as possible. Magnetometer readings were collected at the base station before beginning the north-south traverse and after completing the same traverse. The base station reading was used to determine whether fluctuations in the earth's magnetic field had occurred. One total field and one gradiometer reading was obtained per grid location (survey station). The total gradient was determined by subtracting the gradiometer reading from the total field reading.

The final regional readings were plotted and a contour map was generated. Figure 4-2 illustrates these magnetometry survey findings. Based on this figure, the aerial extent of drum deposition and/or other debris was estimated.

4.3 ENVIRONMENTAL SAMPLING PROCEDURE

During the RI, soil (surface and subsurface), groundwater, cistern, sediment, and production waste samples were collected and analyzed. Table 4-1 lists the types of laboratory analyses performed on each media by an IEPA CLP-approved laboratory, Environmental Science and Engineering (ESE) of Peoria, Illinois. The rationale and procedures for the collection and analysis of these samples are discussed below.

Table 4-1
Laboratory Analysis per Media

Groundwater/Cistern	TCL Volatile Organic Compounds TCL Semi-volatile Organic Compounds TCL Pesticides/PCBs Total Dissolved Solids TAL Inorganics
Production Waste	TCL Volatile Organic Compounds TCL Semi-volatile Organic Compounds TCL Pesticides/PCBs TAL Inorganics TCLP List Compounds
Soil	TCL Volatile Organic Compounds TCL Semi-volatile Organic Compounds TCL Pesticides/PCBs TAL Inorganics

Laboratory Analysis per Media (Continued)

Sediment	TCL Volatile Organic Compounds TCL Semi-volatile Organic Compounds TCL Pesticides/PCBs TAL Inorganics

A Quality Assurance Project Plan (QAPP) was submitted and approved by the Illinois Environmental Protection Agency on January 25, 1993. All sampling and analytical procedures discussed hereafter were completed in accordance with this document.

4.3.1 Sediment and Production Waste Sampling

4.3.1.1 Purpose

Sediment samples were collected and analyzed to assess whether the on-site sediments have been impacted by previous tannery activities and to determine the degree and extent of migration of substances of concern (A sediment sample was proposed to be collected from the cistern but one could not be obtained). In an effort to characterize the production waste as hazardous or non-hazardous, production waste samples were collected from both contained (deteriorating drums) and non-contained sources. The samples were collected from various locations in Areas IV and V.

4.3.1.2 Locations

A total of eleven of twelve proposed sediment samples (SS-01 through SS-12) were collected during the RI. The sediment and production waste sample locations are shown in Figures 4-3 and 4-4 respectively. Six sediment samples (SS-01 through SS-03 and SS-06 through SS-08) were collected from the two former wastewater process ponds. Two sediment samples were collected from the area below the former sluice (SS-09 and SS-10). Two sediment samples, SS-04 and SS-05, were collected from in and around low lying areas. The remaining sediment sample was collected from the open sewer (SS-12). A sediment sample was to be collected from the bottom of the cistern (SS-11) but no sediment could be obtained. Nine (instead of the originally proposed seven) production waste samples (PW-01 through PW-09) were collected during the RI.

4.3.1.3 Sampling Methods and Equipment

The following information presents the sampling method for collecting sediment samples from the ponds, sluice, open sewer, and the lowland bermed areas.

Disposable plastic trowels (one per sample location) were used to collect sediment from the ponds, sluice, open sewer, and lowland areas.

The sediment samples collected for VOC analysis were placed immediately into their respective containers. VOC samples were packed in order to minimize headspace.

Samples collected for non-volatile organic compound analysis were transferred from the sampling device to a compositing tray then to their respective sample containers. All samples were capped as quickly as feasible. The samples were placed into iced coolers to preserve them at 4°C.

The production waste samples were collected using disposable plastic trowels, one per sample location. Any liquids present were decanted. The samples were transferred directly to their respective sample containers. All samples were capped as quickly as feasible. The samples were placed into iced coolers to preserve them at 4°C.

4.3.1.4 Sediment and Production Waste Quality Control Samples

During each sampling event, quality control (QC) samples were collected and submitted for laboratory analysis. Equipment blank and field duplicate samples were collected as part of the QC protocol.

The need for a trowel equipment blank was negated because new disposable plastic towels were used at each sample location. However, an equipment blank was collected from the compositing tray in which the sediment samples were mixed for non-volatile compounds.

Field duplicate samples were collected to provide statistical information relating to the samples variability and serve as a check on the precision of the sample collection method.

4.3.2 Surface and Subsurface Soil Sampling

4.3.2.1 Purpose

Fifty-eight soil samples were collected and analyzed from 43 sample locations (SB-01 through SB-43) to characterize the surface and subsurface soils and to determine the presence, extent, and magnitude of environmental impacts.

4.3.2.2 Locations and Rationale

Forty-three subsurface samples were obtained from the unsaturated zone immediately above the Static Water Level (SWL) (located approximately 4 feet below grade) and

15 surface soil samples were obtained from the 43 soil boring locations. These surface and subsurface samples were collected in an effort to assess the presence and magnitude of impact to the surface and subsurface from former tannery operations. The surface samples were collected from the surface to a depth of approximately one foot below grade.

Four soil samples were collected off site in an effort to characterize background levels. Two of the background soil samples were collected at the surface (SB-41 and SB-42). Subsurface soil samples were collected above the SWL from soil borings SB-41, SB-42, and SB-43. All soil sampling locations are shown in Figure 4-5.

Table 4-2 illustrates those soil borings designated for subsurface and surface soil sample collection.

Table 4-2
Soil Borings Designated for Subsurface and Surface Sample Collection

Surface Soil Samples	SB-02, SB-05, SB-08, SB-10, SB-11, SB-15, SB-19, SB-21, SB-24, SB-27, SB-30, SB-33,SB-36, SB-39, SB-41 and SB-42
Subsurface Soil Samples	SB-01 through SB-43
Off-Site Samples	SB-41, SB-42, SB-43

4.3.2.3 Surface and Subsurface Soil Sampling Methods and Equipment

Soil sampling field activities were conducted simultaneously with monitoring well installation wherever possible. Monitoring well data was used to verify the SWL and depth of the sampling zone.

Split spoon soil samples were collected while drilling in accessible areas. Soil samples were collected by using a split-spoon sampler (ASTM D1586) driven by a 140-pound hammer free-falling 30 inches. Once retrieved, the split spoon was opened and screened using a PID. A stainless steel knife was used during the screening process to part the sample in order to survey portions of the sample which were not disturbed by the split spoon sampler. The stainless steel knife was cleaned between sample intervals. Soil collected from the split-spoon sampler was transferred directly to the sample containers.

Due to the shallow nature of the groundwater table at the site and restricted access for the drilling rig to some areas of the site, stainless steel hand augers were used to collect several soil samples in areas inaccessible for the drill rig. Soil samples collected with a hand auger. A stainless steel spoon was used to transfer the soil into the sample container. Soil collected for VOC samples was packed into the sample container and headspace was minimized. All samples were capped as quickly as feasible.

4.3.2.4 Surface and Subsurface Soil Quality Control Samples

During this sampling event, quality control (QC) samples were collected and submitted for laboratory analysis. Equipment blank and field duplicate samples were collected as part of the QC protocol.

Equipment blanks were collected for each piece of sampling equipment used in the collection of samples. For soil sampling, the samples were collected form a stainless steel hand auger and split spoon to verify the adequacy of the decontamination procedures.

Duplicate samples were collected in accordance with the QAPP to provide statistical information relating to the sample variability and serve as a check on the precision of the sample collection method.

4.4 MONITORING WELL INSTALLATION/CLOSURE

4.4.1 Purpose

Seven monitoring wells (MW-1 through MW-7) were installed during field activities as a means of assessing groundwater quality, horizontal groundwater flow direction, groundwater flow rate, and site stratigraphy. One 14-foot deep stainless steel monitoring well (installed by others) was abandoned to remove this potential conduit from the subsurface.

4.4.1.1 Locations and Rationale

Seven water-table monitoring wells (screens intersecting the water table) were installed as part of the field activities. The monitoring well locations (installed and abandoned) are shown on Figure 4-6. Two monitoring wells (MW-1 and MW-2) were installed adjacent to the former tannery process ponds. These monitoring wells were located in areas believed to be downgradient from the former tannery process ponds, and were used to determine if groundwater had been impacted by the process ponds.

Four monitoring wells were installed around the periphery of the site. These four wells are used to evaluate the horizontal extent of the impact on the groundwater by the tannery activities. Monitoring wells MW-3, MW-5, and MW-6 were located along the eastern edge of the property boundary, in the assumed downgradient direction, to determine the horizontal extent of environmental impact and to determine whether off-site migration had occurred. Monitoring well MW-4 was located along the western edge of the property boundary, in the assumed upgradient direction, to determine if off-site sources were contributing to groundwater impact.

One monitoring well was installed off-site to the north (upgradient of the former tannery). The upgradient monitoring well, MW-7, served to define background levels of chemicals in the groundwater and to aid in determining if off-site sources were contributing to groundwater impact.

The exact monitoring well locations were determined in the field based on physical accessibility to the proposed locations. There were no major deviations from the original work plan.

Well screens in water-table wells were positioned such that a minimum of two feet of screen was above the static water level (SWL) at the time of installation. Groundwater levels were measured in each monitoring well to determine the lateral flow direction.

4.4.2 Drilling Method

4.4.2.1 Monitoring Well Installation

Prior to drilling, the drill rig and related equipment were decontaminated. All drilling was initiated using 4.25-inch I.D. hollow-stem augers (HSA). Limited amounts of potable water were used during drilling in an effort to eliminate heaving sands. Monitoring well boreholes were advanced, on average, to a depth approximately twelve feet below grade. Total depth of the monitoring wells varied based on the depth of the SWL.

All drill cuttings were containerized in 55-gallon drums and staged at a central location at the site. Each drum was labelled with well number, date, and drum contents.

4.4.2.2 Monitoring Well Closure

Prior to closing the monitoring well, installed by others, appropriate permits/water well sealing forms were obtained from the Lake County Health Department and all fees paid. Appendix B contains the completed forms for well closure.

Before the monitoring well was closed, the drillers straightened the bent riser as much as possible. The well depth was then measured with a decontaminated weighted tape. The drillers wrapped the cable around the monitoring well riser and pulled the well out in one piece. After the well was removed, neat cement grout was tremmied into the borehole from bottom to top.

Figure 4-6 shows the location of the abandoned monitoring well.

4.4.3 Monitoring Well Borehole Soil Sampling

Soil samples were collected continuously during drilling using a split-spoon sampler (ASTM D1586) driven by a 140-pound hammer free-falling 30 inches. Upon retrieval, the split spoon was opened and screened using a photoionization detector (PID). A stainless steel knife or similar tool was used during the screening process to part the sample in order to survey portions of the sample which had not been disturbed by the split-spoon sampler. The stainless steel knife or similar tool was cleaned between sample intervals. Two soil samples were collected from each of the five monitoring wells; MW-2, MW-3, MW-4, MW-6, and MW-7. One soil sample was collected from the split-spoon interval directly above the SWL and the second sample was collected from directly below the SWL.

All soil samples were described in the field using ASTM Method D2488 (Description of Soils) and classified in the field using the Unified Soil Classification System (USCS). Descriptions and classifications were recorded on field geologic logs. Geologic Logs are included as Appendix C. Four additional soil samples were collected from two monitoring wells (MW-1 and MW-5) for geotechnical analysis.

4.4.4 Monitoring Well Borehole Soil Quality Control Samples

During this sampling event, quality control (QC) samples were collected and submitted for laboratory analysis. Equipment blanks and field duplicate samples were collected as part of the QC protocol.

Equipment blanks were collected for each piece of sampling equipment used in the collection of the borehole soil samples. For borehole soil sampling, the samples were collected from a split spoon sampler to verify the adequacy of the decontamination procedures.

Duplicate samples were collected to provide statistical information relating to the sample variability and serve as a check on the precision of the sampling collection method.

4.4.5 Geotechnical Analysis

In order to classify the soils, geotechnical samples were collected to determine grain size, Atterberg Limits, and moisture content. A total of four soil samples were collected from two soil borings/monitoring wells: two from above and two from below the SWL. These samples were collected from MW-1 (6'-8'), MW-1 (8'-10'), MW-5 (2'-4'), and MW-5 (4'-6'). An aliquot of soil from each split spoon was collected and stored in labelled, sealed plastic bag for future use, if necessary.

Labelling of geotechnical samples included date and time of collection, monitoring well number, the depth at which the sample was collected, and the name of the sampler. Soil samples were stored on site in the field trailer until completion of the project. Geotechnical analytical test data is summarized in Table 4-3 and provided in Appendix D.

4.4.6 Monitoring Well Installation/Construction Details

Prior to installation of the well, all well materials were decontaminated.

All monitoring wells were constructed using the HSA method. All monitoring wells were constructed of 2-inch I.D. Type 304 stainless steel with flush joints. Well screens consisted of Type 304 stainless steel continuous wire wrap with 0.010 inch openings. Well screens were ten feet in length. Prior to placing the well string in the borehole, 0.5 feet of clean 85/95 size (or equivalent) silica sand was placed in the bottom of the borehole to minimize intrusion of fine-grained sediment from below into the well. Personnel responsible for well installation wore new surgical gloves while handling the well materials. A filter pack consisting of 85/95 size (or equivalent) silica sand was added to the annulus to a level approximately one foot above the well screen. While slowly adding the filter pack, the HSAs were incrementally withdrawn so as to allow the filter material to drop out of the bottom of the HSA, but prevent the formation from collapsing around the well screen. A 0.5 foot to one foot thick bentonite pellet seal was placed above the filter pack and hydrated with approximately five gallons of potable water. Bentonite seals in all the monitoring wells were allowed to hydrate a minimum of one hour prior to placing the concrete cap. Due to the shallowness of both the well and the SWL, grout was not required to complete the monitoring wells. The top one foot of the annular space was sealed with concrete. A 4-inch x 4-inch x 5-foot long steel protective stick-up protective cover was placed over the stainless steel riser. A concrete apron was installed around each protective cover. Each well was equipped with an expandable locking cap and the protective cover was subsequently locked. The exact dimensions of the filter pack and bentonite seal were adjusted in the field on a well by well basis. Geologic/monitoring well construction diagrams are included in Appendix C. The following information was recorded on the geologic/monitoring well construction diagrams:

- General information including the drilling contractor, well number, well site, time and date the well construction was initiated and finished, and the name of the driller and supervising geologist or engineer.

- Specific information including the drilling method, borehole diameter, type and diameter of the protective casing, riser pipe and well screen,

TABLE 4-3
COMMONWEALTH EDISON – FORMER GRIESS-PFLEGER TANNERY
GEOTECHNICAL ANALYSIS DATA

Boring/Monitoring Well Number	Depth (feet)	Mechanical Analysis				Classification	Moisture	Atterberg	Comments
		Gravel %	Sand %	Silt %	Clay %	U.S.C.S.	Content %	Limit	
MW-1	6 – 8	1.6	33	58.9	6.5	OM	235.2	NP	Black organic PEAT.
MW-1	8 – 10	0.3	81.6	13.3	4.6	SP	40.9	NP	Black fine SAND, little silt, trace clay
MW-5	2 – 4	39.1	58.2	1.6	1.1	GP-SP	13.7	NP	Brown fine to coarse SAND, some fine to coarse GRAVEL, trace SILT and CLAY
MW-5	4 – 6	16.4	77.3	5.5	0.8	SP	21.7	NP	Brown fine to coarse SAND, little fine GRAVEL, trace SILT and CLAY.

Notes:
NP – Non-Plastic
SP – Poorly graded sands and gravelly sands with little or no fines.
GP – Poorly graded gravels and gravel/sand mixtures, little or no fines.
OM – Organic Material

type of annular backfill, annular seal and filter pack, and depths to the top of the annular seal and filter pack and total well and boring depth.

Typical well construction details of the above depth measurements were made in the field using a weighted tape. Measurements are accurate to within 0.01 ft.

4.4.7 Well Development Procedures

Well development allows for the free flow of water through the disturbed formation into the filter pack and well screen. Prior to well development and purging, all equipment was decontaminated in accordance with procedures outlined in Section 4.4.11. Well development and purging was accomplished by manually bailing using a dedicated disposable Teflon™ bailer. Development was not conducted until the bentonite pellet seal in each well was allowed to set for a minimum of 24 hours. Immediately before sampling, the wells were purged so that a minimum of three well volumes were removed from the monitoring well. Purging the monitoring well allows for a representative sample to be collected from the aquifer. The well volume was determined by measuring the static water level in the well with an electronic interface probe (IP) to the nearest 0.01 foot. The static water level from the top of the well casing was subtracted from the total depth of the well from the top of the well casing to determine the height of the water column in the well. The height of the column multiplied by the area of the well equalled one well volume. Monitoring wells were considered developed after development water was relatively sediment free, and field parameters (pH, temperature, and specific conductance) stabilized to within 10 percent. Calibration, operation, and maintenance procedures for the pH, specific conductivity, and temperature meter is detailed in the approved QAPP. Field parameter readings were collected after each well volume was removed. The parameters were considered stabilized when three successive readings were within 10 percent. Typically, five well volumes were removed from each monitoring well during development. Well development and well purging field parameter date table are illustrated in Appendix E.

All development water was containerized in 55-gallon drums. Each drum was labelled and staged in a centralized staging area.

4.4.8 In-Situ Hydraulic Testing

In-situ hydraulic conductivity testing, using the slug test method, was conducted in each monitoring well installed during the RI. Testing was conducted by measuring the SWL in the well and then lowering a stainless steel slug into the monitoring well. Water levels in the well were automatically recorded at timed intervals using an electronic data recorder and pressure transducer as the water level falls back to the initial water level before the slug was introduced. Once the initial level was reached, the slug was removed and water levels were again recorded as the level rose back to the initial water level.

The Bouwer and Rice Method was used for determining the hydraulic conductivity from the test data. The results from the slug test are recorded in Appendix F.

4.4.9 Static Water Level Measurements

The static water levels were measured in all of the monitoring wells installed at the site. Water levels were measured with an electronic interface probe (IP). Measurements were collected by lowering the probe into the well until the instrument emitted an audible tone. Depth to water from the top of the stainless steel well riser was measured to the nearest 0.01 ft. Total depth of each monitoring well was determined by lowering the IP to the bottom of the well and sounding for total depth. All water level measurements, date and time, instrument used, and field personnel were recorded in a bound field logbook. The electronic interface probe was decontaminated prior to and after a reading was collected. Static water level measurements are included in Appendix G.

4.4.10 Groundwater and Cistern (Surface Water) Sampling

4.4.10.1 Purpose

One round of groundwater samples was collected to assess whether groundwater had been impacted by former tannery activities and as a means of delineating the extent of migration. The on-site cistern water was sampled to determine if it had been impacted by previous site activities. The location of the monitoring well and cistern sampling location are illustrated in Figure 4-6.

4.4.10.2 Locations

Groundwater samples were collected from the seven monitoring wells installed during the RI. Groundwater samples were collected first from the wells which were expected to be the least impacted (typically those hydraulically upgradient of the site) and then working toward the potentially most impacted (down gradient) to prevent cross contamination.

A surface water sample was collected from the cistern which is located on the west side of the property near the gate access.

4.4.10.3 Sampling Methods and Equipment

The cistern water sample was collected by using a disposable Teflon™ bailer. A Kemmerer sampler was proposed to collect the cistern sample, however, it malfunctioned in the field. New nylon rope was used to lower the Teflon™ bailer into the cistern. Sample containers were filled in order of decreasing volatility: volatile organic compounds, semi-volatile organic compounds, pesticides/PCBs, then inorganic (metals and cyanide) compounds.

After unlocking the protective casing, the headspace in the monitoring well and the ambient air near the well head was monitored with a PID. The PID measurements were recorded in the field log.

The wells were purged by manual bailing using a disposable Teflon™ bailer. During purging, the pH, specific conductivity, and temperature of the groundwater were recorded. Measurements were made after each well volume was purged. Triplicate measurements were made after the third well volume. All measurements were recorded in the field log book. During purging, color, odor, and relative turbidity were recorded in the field log book. Groundwater samples were collected with dedicated disposable Teflon™ bailers.

Sample containers were filled directly from the bailer. Sample containers for VOAs were filled first, followed by containers for semi-volatile organic compounds, pesticides and PCBs, cyanide, and metals analyses. VOA sample containers were filled completely and checked for air bubbles. The aliquot for metals analysis was filtered at the well site using a disposable 0.45 micron positive pressure filter. Subsequent to filtering, the sample was preserved with nitric acid (HNO_3) to a pH < 2. The aliquot for cyanide analysis was preserved with sodium hydroxide (NaOH) to a pH > 12. After collection, all samples were placed directly into a sample cooler where a temperature of 4°C was maintained. Chain of custody procedures for the samples are discussed in Section 4.6.

4.4.10.4 Groundwater and Cistern Quality Control Samples

During the groundwater sampling event, quality control (QC) samples were collected and submitted for analysis. Field duplicate samples were collected in accordance with the QAPP to provide statistical information relating to the samples variability and to serve as a check on the precision of the sampling collection method.

An equipment blank was not collected for the surface water sample. The QC for this matrix was utilized from the groundwater samples.

4.4.11 Decontamination Procedures

Potable water samples were collected from Commonwealth Edison's Power Generation facility because it was anticipated that this water was going to be used for drilling and decontamination. This facility obtains its water from the City of Waukegan. However, in lieu of this, the water for decontamination was obtained from the driller's potable water supply source, the city of Cherry Valley, Illinois. Analytical data for the City of Waukegan potable water supply source is located in Appendix H.

All drill rigs, drilling equipment, split spoons, sampling trowels and spoons, hand augers, well casings and screens, well development equipment, in-situ hydraulic testing equipment, and water level measurement equipment were decontaminated upon arrival at the site, between each monitoring well or soil boring location and prior to departure in two steel trough-like structures with dimensions of 6-feet x 3-feet. The steel trough was placed on bermed high density polyethylene sheeting (HDPE).

The troughs were large enough to allow the back of the drill rig to be positioned over them. A steel grate was placed on top of the troughs where the HSAs, drill rods, well materials, and other equipment were decontaminated. All equipment, after decontamination, was placed on saw horses and allowed to air dry. All rinsate resulting from decontamination was collected and temporarily stored in 55-gallon drums. The drums were labelled as to the previous monitoring well or boring installed, contents and date. The drums were staged at a central location site.

Decontamination of drill rig, downhole tools, well screen and casing, and well development equipment consisted of high pressure steam washing. Any visible residue after steam cleaning was scrubbed with a brush and a solution of phosphate-free laboratory grade detergent (Alconox) and potable water followed by a final steam cleaning. All decontaminated equipment was allowed to air dry prior to use. Well materials were wrapped in new plastic for transport to the well location.

Split spoons were decontaminated between each new well location following the procedure described above. However, during drilling, the split spoons were decontaminated between each sampling interval with a brush and a solution of phosphate-free laboratory grade detergent (Alconox) and potable water followed by a final rinse with distilled water.

New disposable Teflon™ bailers were used to develop and collect groundwater samples from all of the monitoring wells. Therefore, decontamination of this equipment was not needed.

The electronic water level indicator, pH, specific conductivity and temperature probes were decontaminated at the well site between measurements. Decontamination of the equipment consisted of a series of rinses with potable water, dilute nitric acid (10%) solution, and a final double rinse with distilled water. The equipment was allowed to air dry prior to being wrapped in new plastic bags for transport to the next well location.

4.4.12 Fate of Drummed Material

The fate of drummed material will be based upon the proper characterization of materials (decontamination/purge/well development water and soil cuttings) currently stored in drums on site.

4.5 SURVEYING METHODOLOGY

M&E conducted surveying at the former Griess-Pfleger Tannery to establish horizontal and vertical control, and set up a survey grid for the magnetometer survey. The horizontal survey located monitoring wells, soil borings, sediment samples, potential waste locations, fence corners, ponds, and railroad tracks. The vertical survey established top of riser (TOR) elevations of the monitoring wells and ground surface elevations.

The horizontal survey was conducted using a Global Positioning System (GPS) with an accuracy of ± 5 - 10 millimeters. It was determined that due to the many obstructions at the site blocking the path between points, a GPS survey would be more efficient. The type of GPS survey method used was Rapid Static. For the Rapid Static survey, a temporary reference station was set up inside the entrance gate. Then, M&E personnel used roving receivers to record the locations of the sampling points. Computer software was used to process the data collected from the receivers and assigned North - East coordinates to the unknown points. The coordinates were used to create a map showing monitoring wells, soil borings, sediment samples, potential waste locations, and existing features of the site.

The vertical survey of the monitoring well riser locations was established with an automatic level. A reference benchmark elevation of 100.00 feet was set on a fire hydrant located on the west side of Sand Road. The riser elevations were taken on the north side of the risers. M&E can accommodate the reporting of the vertical elevations in reference to any other reference datum provided should this prove helpful in evaluation of the data.

4.6 SAMPLE PACKAGING AND SHIPMENT

After collection, all samples were labelled, sealed, packaged, and delivered by either next day air or by M&E personnel to the CLP Laboratory. ..3E Laboratory located in Peoria, Illinois.

Sample container lids were sealed to the container using strapping tape to prevent loosening. Clear tape was placed over the sample label to ensure that writing on the label remained legible. Each sample container was sealed in individual plastic bags. The sealed bags containing the samples were placed in sample coolers, and insulated with a packing material such as vermiculite. Temperature in the coolers was maintained at 4°C through the use of ice sealed in plastic bags. The sample coolers were sealed with strapping tape for delivery to ESE.

A chain of custody record was completed and accompanied samples during shipment to the laboratory. The chain of custody record was sealed in plastic for protection and taped inside the cooler to the lid. A copy of the chain of custody record was retained by the sampling team. All records included: (1) sample numbers; (2) date and time of collection; (3) locations where samples were collected; (4) type of sample: grab or composite; (5) analytical parameters requested; (6) names and signatures of samplers; and (7) names of persons involved in the chain of possession from time of collection to receipt at the laboratory.

Each sample cooler shipped was sealed to verify that the samples have not been disturbed during shipment. The custody seals were pre-printed tape strips which were signed and dated by a member of the sampling team and affixed to the lid of the cooler in a manner that would cause it to be broken if the cooler were opened. A minimum of two custody seals were required for each cooler. These seals were checked by the laboratory and their condition recorded in a laboratory inventory log.

SECTION 5.0
RESULTS AND DISCUSSION OF ENVIRONMENTAL INVESTIGATION

5.1 SITE GEOLOGY

The site geology is characterized as consisting of surficial unconsolidated material, made-land soils. The subsurface soils, typically described, ranged from pale yellow to black, moist to wet, loose to dense, poorly graded silty sand to sand. The silty sands are found as surficial deposits but grade to sands at depth. Trace amounts of fine subrounded gravels are present throughout the strata. The sand grain particles range from fine to coarse. Some boring/monitoring wells (MW-6 and MW-4) have spongy organic matter (peat) ranging from four feet to six feet below grade, respectively. Admixed with the sands are coal fines, tannery waste material (animal hair), organic material (roots, vegetation), gravel and asphalt. Tannery wastes can be found up to a depth of 10 feet but, the asphalt and gravel only extend to a depth of two feet below grade. The sand extends to the base of all the borings (approximately 12 feet deep). The geologic logs of the soil boring/monitoring wells are included in Appendix C. Figures 5-1 and 5-2 illustrate the north-south and west-east cross sections of the site.

The geotechnical analysis completed on soil boring/monitoring well MW-1 and MW-5 described the subsurface strata as consisting of black organic peat to black to brown, fine to coarse sand with some fine to coarse grained gravel, and containing a trace of silt and clay. Refer to Table 4-3 and Appendix D for the geotechnical analytical summary and data.

5.2 SITE HYDROGEOLOGY

Groundwater at this site is considered a Class I Potable Resource Groundwater by definition of Title 35 of the Illinois Administrative Code (IAC), Subtitle C, Part 620, Subpart B, Groundwater Classification (e.g. groundwater which is presently being used or has the potential for being put to conventional use).

At this time, the aquifer cannot be classified as confined or unconfined. Further subsurface investigation (installation of deeper monitoring wells) would need to be conducted to make this assessment. Using the most recent groundwater elevation data (June 4, 1993 data), the static water level (SWL) ranged from approximately 4.5 feet to 8.5 feet below grade . The tabulated water elevation data is illustrated in Appendix G. The SWL measurements were collected from the seven on-site monitoring wells which are screened in the unconsolidated sediments. The saturated thickness is determined to be approximately five to 11 feet (the entire length of the well screen). It is anticipated that the saturated thickness of the aquifer is greater. However, this cannot be determined unless a fully penetrating well (a well constructed to the confining layer) has been installed.

The hydraulic gradient at this site was calculated as 1.4 x 10^{3} feet/foot. The hydraulic gradient was calculated by determining the difference in the SWL height between MW-5 (5.50 feet) and MW-7 (8.53 feet) and dividing this difference by the horizontal distance between these two monitoring wells; 2,160 feet.

The hydraulic conductivity (K) for each monitoring well was determined by performing a rising head (Kr) and a falling head (Kf) test in each monitoring well. The Bouwer-Rice Method was used to determine the analytical output of this data. The Kr ranged from 2.55 x 10^{-3} centimeters per second (cm/sec) to 8.459 x 10^{-3} cm/sec. The Kf ranged from 1.011 x 10^{-3} cm/sec to 9.628 x 10^{-3} cm/sec. This value for hydraulic conductivity is typical of that found in silty sand (Freeze and Cherry, 1979).

The groundwater at this site flows east-southeast toward Lake Michigan. The groundwater flow direction may vary slightly depending upon seasonal variances in precipitation and evapotranspiration.

Figures 5-3 and 5-4 are groundwater contour maps illustrating the flow direction from water levels collected on May 24, 1993 and June 4, 1993.

At the site, groundwater is estimated to recharge at a rate of 9.2 inches/year based upon annual rainfall and evapotranspiration. The exact rate of infiltration cannot be determined because it is temporal, e.g. infiltration is dependent upon the number of storms, duration, intensity, interval between storms, and available capacity of the soil. Made-land soil, typical of soil that exists at the facility, does not have a permeability estimate however, the permeability of the soils at Illinois State Beach Park ranges from 6.3 to 20.0 inches/hour for sands.

SECTION 6.0
NATURE AND EXTENT OF ENVIRONMENTAL IMPACT

After the Remedial Investigation (RI) was completed, the site was divided into three areas: Area I consists of the former production facility, Area II consists of the wastewater area, and Area III consists of the production waste area. These divisions are based upon the current analytical data, site observations, historical information (i.e. aerial photographs), and discussion with Commonwealth Edison. Division of the site will be referred to as Areas I, II, and III from hereon. Figures 6-1 and 6-2 illustrate the site investigation divisions before and after all available data were compiled.

During the RI activities, the following media were sampled to determine the presence or absence of environmental impact: groundwater, surface soil, subsurface soil, sediment and production wastes. One round of sampling was conducted for each matrix. Samples were collected during the Spring and Summer of 1993.

All samples collected were analyzed for the following parameters: Target Analyte List (TAL) Inorganics, Target Compound List (TCL) Volatile Organic Compounds (VOCs), TCL Base/Neutral/Acid Extractables (BNAs) and TCL Pesticides/PCBs (P/PCBs). Additionally, the production waste (PW) samples were analyzed for all Toxicity Characteristic Leaching Procedure (TCLP) parameters. All samples collected were analyzed by the ESE Laboratory located in Peoria, Illinois in accordance with Illinois Contract Laboratory Program Protocol.

For purposes of data summary, data for all soil, sediment, and production waste samples were evaluated. From this evaluation, comparisons were made and generalized trends were identified between and within the three areas regarding constituent levels therein.

The constituents identified, the concentrations found, and generalized trends for the samples collected during field activities are discussed in the following subsections. Analytical data for all media is presented in Appendix I.

6.1 GROUNDWATER

A total of seven monitoring wells were installed in and around the former tannery. All seven wells were sampled in May 1993. In addition to the seven groundwater samples collected, a water sample was collected from the cistern, located on the west side of the property. For comparative purposes, the cistern sample was treated as a groundwater sample.

The analytical results from groundwater samples were compared with the constituent concentration limits found for Class I Groundwater in IAC Title 35, Subpart D, Section 620.410.

6.1.1 Monitoring Well And Cistern Sample Results

6.1.1.1 Volatile Organic Compounds

Only one VOC, acetone, was detected in any of the samples collected. Acetone was detected in five of the eight samples collected, ranging in concentration from an estimated value of 5 ug/l in MW-6 to 16 ug/l in the cistern. Acetone was not detected in MW-4, MW-5, and MW-7. There is no Class I Standard for this compound. Acetone is a commonly found laboratory contaminant which was detected in every field blank and laboratory blank with the exception of the blanks associated with these samples. Additionally, historical records indicate no use of this compound at this site. The presence of this compound in these samples is questionable.

6.1.1.2 Base-Neutral/Acid Extractable Compounds

Base-neutral/acid extractable compounds were not detected in any of the environmental samples collected.

6.1.1.3 Pesticides/PCBs

Pesticides and PCBs were not detected in any of the environmental samples collected.

6.1.1.4 Inorganics

The Class I Groundwater Quality Standard for chromium, as found in IAC Title 35, Subpart D, Section 620.410(a), is 100 ug/l. All of the groundwater samples collected during this investigation showed chromium concentrations at less than 25 percent of the Class I Standard.

As expected, inorganic analytes were detected in all samples collected. Many of these analytes are considered naturally occurring in groundwater at varying levels. Analytes that exceeded Class I water quality standards are summarized below.

All monitoring well samples collected exceeded the 150 ug/l Class I Standard for manganese. The concentrations ranged from 264 ug/l at MW-2 to 4,140 ug/l at MW-3. The upgradient well, MW-7, showed the second highest manganese concentration of 3,140 ug/l.

The Class I Standard of 5,000 ug/l for iron was exceeded in MW-3, MW-4, MW-5, and upgradient well MW-7. Concentrations ranged from 5,080 ug/l in MW-7 to 34,500 ug/l in MW-4.

Lead was identified in MW-1 at a concentration of 40.7 ug/l, above the Class I Standard of 7.5 ug/l. The presence of lead is questionable at this location because the concentration of lead in the duplicate sample was reported as less than 2.4 ug/l.

Arsenic was also detected in MW-1 above the Class I Standard of 50 ug/l. The arsenic concentration in MW-1 was reported to be 6470 ug/l while the duplicate sample reported 6,490 ug/l. The source of the arsenic is unknown, however, arsenic trioxide may have been used as a rat poison.

All monitoring wells exceeded the Class I Standard of 1,200 mg/l for total dissolved solids.

Overall, it appears that the constituents present in the surficial and subsurficial soil have not significantly impacted the groundwater in and around the site. Additionally, many of the constituents detected above the Class I Water Quality Standards may be naturally occurring in the groundwater as is evidenced by their presence in the upgradient monitoring well.

Analytical results for all groundwater, cistern, field blank, and trip blank samples are found in Table 6-1.

6.2 AREA I

This section summarizes the data collected from surficial and sub-surficial soil samples collected within the boundaries of this area as well as the sediment sample collected from the open sewer located near the cistern. Initially, a sediment sample was scheduled to be collected from the cistern. However, this sample was not collected because the bottom and sides of the cistern were solid and contained no sediment.

A total of 23 soil samples were collected within Area I; 6 surficial, 16 subsurficial, and one sediment.

6.2.1 Volatile Organic Compounds

A total of three samples were found to contain one VOC each; SB-33B, SB-35B, and SB-37B. Both SB-35B and SB-37B contained methylene chloride at an estimated concentration of 12 ug/kg and 18 ug/kg respectively. Methylene chloride is a commonly used laboratory solvent and, as such, is often found as a laboratory contaminant. This, coupled with the historic non-use of this solvent during the tanning process, raises question as to the presence of this compound in the environmental samples collected.

Trichloroethene (TCE) was the only other VOC detected in this area. Trichloroethene was found in SB-33B at an estimated concentration of 7 ug/kg. The source of the

TCE is unknown and may be related to degreasing activities conducted during the tanning process. Trichloroethene was not positively identified in any other samples collected during the field investigation and should be considered an isolated occurrence.

Other VOCs were not detected in the other environmental samples collected in Area I. Analytical results and sample quantitation limits for all samples are presented in Table 6-2.

6.2.2 Base-Neutral/Acid Extractables

At least one BNA was detected in 17 of the 23 samples collected within this area. The majority of the BNAs identified were polynuclear aromatic hydrocarbons (PNAs). In addition to the PNAs, di-n-butylphthalate, a common laboratory contaminant, was identified in one sample, SB-33B, at an estimated concentration of 190 ug/kg. Carbazole was identified in 6 of the samples collected. Carbazole concentrations ranged from an estimated 240 ug/kg in SB-39B to 1,900 ug/kg in SB-39A. Seven of the samples collected were found to contain dibenzofuran, ranging in estimated concentrations of 140 ug/kg in SB-36B to 1,900 ug/kg in SB-30A. The source of the carbazole and dibenzofuran are unknown.

Polynuclear aromatic hydrocarbons were found in almost every sample, including the background soil samples, that contained BNAs. Generally, five to ten PNA compounds were identified in the samples which contained PNAs. Due to the similarity in structure and the likelihood that all of the PNAs are from the same or a similar unknown source, PNAs are addressed as a group and not individually.

The concentrations of the PNAs tended to remain constant or increase slightly with increasing depths. Total PNA concentrations ranged from non-detected to 60,100 ug/kg in sample SB-33B.

Analytical results for the samples collected in this area can be found in Table 6-2. Surficial and subsurficial total PNA distribution maps can be found as Figures 6-3 and 6-4.

6.2.3 Pesticides/PCBs

A variety of pesticides were identified in 16 of the 23 samples collected in this area. A total of seven different pesticides were identified, they include: beta-BHC, heptachlor, heptachlor epoxide, dieldrin, DDT, DDE, and DDD. It is possible that the pesticides were used by the tannery for rodent control during operations.

The pesticides were identified in both the surficial and subsurficial soils. Pesticides were not identified in the open sewer sediment sample. A pattern or trend could not be distinguished with regard to the distribution of the pesticides in this area. This area did contain the highest site wide surficial pesticide concentrations. Soil boring SB-39A was found to contain slightly less than 48,000 ug/kg of DDT and its' associated breakdown products, DDE and DDD. The source of these levels is unknown, but is likely the result of a small surficial spill. The determination of a small surficial spill occurring is supported by the lack of significant downward migration of the pesticides as is evidenced by the large reduction of pesticide concentrations in the sample collected at a depth of 2-4 feet at the same location. The sample collected 2-4 feet below grade in SB-39B, contained <100 ug/kg total pesticides.

Polychlorinated biphenyls were identified at only one location in this area, SB-33B. This sample contained 4,100 ug/kg of a mixture of Aroclor 1248 and 1254. Since PCBs were not historically used in the tanning process, the source of the PCBs is unknown.

Throughout this area, the pesticide and PCB concentrations tended to decrease rapidly with increasing depth.

Analytical results for the samples collected in this area can be found in Table 6-2. Surficial and subsurficial total pesticide distribution maps can be found as Figures 6-5 and 6-6. Surficial and subsurficial total PCB distribution maps can be found as Figures 6-7 and 6-8.

6.2.4 Inorganics

Numerous inorganic analytes were identified in the soil and sediment samples collected during the field investigation. Historical information, coupled with the analytical data derived from the field investigation, indicate that the analytes of concern are arsenic, chromium, mercury, and lead. For purposes of data summary, the inorganic data for all soil and sediment were evaluated.

Arsenic concentrations in Area I ranged from 0.4 mg/kg at SB-34B to 65.8 mg/kg at SB-40B. Twelve of the 23 samples collected contained <10 mg/kg arsenic.

Seven of the 23 samples collected contained no detectable mercury. The highest reported concentration was found in SB-40B at a concentration of 25.6 mg/kg.

Concentrations of lead ranged from 1.7 mg/kg at SB-34B to 399 mg/kg in SB-43A. Sample SB-43A, a background sample collected across the street and hydraulically upgradient from the site, indicates elevated background concentrations of this analyte. Figure 6-9 provides a surficial distribution of lead levels.

Chromium concentrations in this area ranged from 3.2 mg/kg at SB-34B to 2,600 mg/kg at SS-12. All other samples collected within this area contained less than

1,000 mg/kg chromium. Sample SS-12 was collected from the open sewer located near the cistern. This open sewer likely acts as a sedimentation basin, collecting and concentrating the chromium. This possibly explains the elevated value with respect to the other samples collected within this area. The average chromium concentration within this area is 280 mg/kg. By removing the contribution of the sediment sample collected from the open sewer, the average chromium concentration decreases to 180 mg/kg. Figures 6-10 and 6-11 provide a surficial and subsurficial distribution of chromium levels.

In general, the highest concentrations of analytes identified within this area are, at a minimum, 10 times less than the averages found in other areas. The analyte concentrations highlighted above tend to decrease with increasing depth. This trend is similar to the pesticides and PCB trend.

Analytical results for the TAL analytes identified in this area can be found in Table 6-2.

6.3 AREA II

This section summarizes the data collected from surficial and sub-surficial soil sample collected within the boundaries of this area as well as the sediment samples collected therein.

A total of 28 soil samples were collected within Area II; 7 surficial, 11 subsurficial, and 10 sediment.

6.3.1 Volatile Organic Compounds

Six of the 28 samples collected contained one of three VOCs identified; methylene chloride, 2-butanone, and carbon disulfide.

Methylene chloride was identified in three of the samples; SB-02A, SB-02B, and SB-08A at concentrations of 21 ug/kg, 25 ug/kg, and 46 ug/kg, respectively. Methylene chloride is a commonly used laboratory solvent and, as such, is often found as a laboratory contaminant. This, coupled with the historic non-use of this solvent during the tanning process, raises question as to the presence of this compound in the environmental samples collected.

Carbon disulfide was identified at an estimated concentration of 22 ug/kg in sample SB-09B, while 2-butanone was identified in both SB-04B and SS-07 at an estimated concentration of 20 ug/kg and 47 ug/kg, respectively. The source of these constituents is unknown.

No other VOCs were detected in any of the other environmental samples collected in Area II. Analytical results and sample quantitation limits for all samples are presented in Table 6-3.

6.3.2 Base-Neutral/Acid Extractables

At least one BNA was detected in 15 of the 28 samples collected within this area. The majority of the BNAs identified were polynuclear aromatic hydrocarbons (PNAs). In addition to the PNAs, bis(2-ethylhexyl)phthalate, a common laboratory contaminant, was identified in eight samples ranging from an estimated concentration of 220 ug/kg in SB-08A to 11,000 ug/kg in sample SS-10. The level of bis(2-ethylhexly)phthalate in sample SS-10 suggests that it is not a laboratory artifact and therefore is present in the sample. The source of bis(2-ethylhexyl)phthalate is unknown. However, this compound is commonly used as a plasticizer and found in numerous plastic based materials. Carbazole was identified in two of the samples collected. Carbazole concentrations were an estimated 94 ug/kg in sample SB-29B and 1,900 ug/kg in sample SS-10. Sample SB-29B was found to contain dibenzofuran at an estimated concentration of 330 ug/kg. Pentachlorophenol was found at an estimated concentration of 1,200 ug/kg in sample SB-05B. The source of the carbazole, dibenzofuran, and pentachlorophenol are unknown.

The concentrations of the PNAs tended to remain constant or increase slightly with increasing depths, unlike the pesticides/PCBs and metals, with the exception of the samples collected from the split spoons samples from MW-2. Total PNA concentrations ranged from non-detected in 19 of the samples to 36,700 ug/kg in sample SS-10.

Analytical results for the samples collected in this area can be found in Table 6-2. Surficial and subsurficial total PNA distribution maps can be found as Figures 6-3 and 6-4.

6.3.3 Pesticides/PCBs

A variety of pesticides were identified in 23 of the 28 samples collected in this area. A total of 12 different pesticides were identified, they include: beta-BHC, heptachlor, heptachlor epoxide, aldrin, dieldrin, DDT, DDE, DDD, endrin, endrin aldehyde, and both alpha and gamma chlordane. It is possible that the pesticides were used by the tannery for rodent control during operations.

The pesticides were identified in both the surficial and subsurficial soils. As evidenced in Area I, the pesticide concentrations tended to decrease with increasing depth, showing that the majority of the pesticides are either at or near the ground surface. The concentrations of pesticides found in this Area II were at least 25 times less than those found in sample SB-39A (Area I), with the highest reported concentration of 1,400 ug/kg at SB-29BD.

Polychlorinated biphenyls were not positively identified in any of the samples collected in this area with one exception, MW-3B, which contained 180 ug/kg of Aroclor 1248. Additionally, the duplicate of sample MW-3C contained low levels of pesticides and PCBs, while the original sample contained none. This variance may be due to sample matrix inhomogeneity. As a result, the presence of these compounds in the environmental sample is questionable.

Analytical results for the samples collected in this area can be found in Table 6-3. Surficial and subsurficial total pesticide distribution maps can be found as Figures 6-5 and 6-6.

6.3.4 Inorganics

Arsenic values ranged from <10 mg/kg in 15 of the 28 samples to 5,500 mg/kg in SB-06B. In addition to SB-06, only one other sample contained arsenic above 1,000 mg/kg, MW-2B at 1,200 mg/kg. The corresponding chromium values for these two samples are more than 6 times greater than the arsenic values at 37,400 mg/kg and 20,000 mg/kg, respectively. All other samples in this area showed arsenic concentrations below 100 mg/kg with the exception of MW-2C, 604 mg/kg.

Mercury was detected in all 28 samples collected in this area. The maximum concentration was 111 mg/kg in MW-2C.

Lead was detected at a maximum concentration of 2,250 mg/kg in SB-04B. The chromium result in this same sample was 45,100 mg/kg. Lead concentrations tended to decrease with increased sampling depth. Figure 6-9 provides a surficial distribution of lead concentrations in excess of 1,000 mg/kg. A subsurficial map was not prepared for lead because only three locations were found to contain lead above the 1,000 mg/kg limit: SB-01B - 1,520 mg/kg; SB-09B - 1,260 mg/kg; and SB-15B - 1,610 mg/kg.

Chromium was detected at a maximum concentration of 81,900 mg/kg in SB-09B. Three of the samples collected in this Area II contained <10,000 mg/kg chromium. The remaining samples all contained between 10,000 and 80,000 mg/kg chromium. Chromium concentrations tended to decrease an average of 30% as sampling depth increased from the surface to the water table. The average chromium concentration within this area was 38,500 mg/kg. Figures 6-10 and 6-11 provide a surficial and subsurficial distribution of chromium levels.

It should be noted that the chromium appears to be strongly adsorbed to the soil beneath the water table. This is supported by the analytical data that shows in excess of 20,000 mg/kg chromium in the soil beneath the water table (MW-2B and MW-2C) and only 23.2 ug/l chromium in the groundwater sampled from MW-2, well below the 100 ug/l Class I Standard.

Analytical results for the TAL analytes identified in this area can be found in Table 6-3.

6.4 AREA III

This section summarizes the data collected from surficial and sub-surficial soil sample collected within the boundaries of this area.

A total of 35 soil samples were collected within Area III; 7 surficial, 19 subsurficial, and 9 production waste. This section covers only the "totals" analysis for the production waste samples. The results for the TCLP analyses are summarized in Section 6.5. Additionally, the production waste samples were not included in any of the distribution figures. These samples were not included because the samples were collected from either a distinctive waste pile or a container that was not representative of the majority of the area.

6.4.1 Volatile Organic Compounds

Eight of the 38 samples collected contained one of five VOCs identified; methylene chloride, acetone, 2-butanone, toluene, and trichloroethene.

Methylene chloride was identified in four of the samples; SB-13B, PW-4, PW-7, and PW-8 at concentrations of 23 ug/kg, 180 ug/kg (estimated), 18 ug/kg, and 6 ug/kg (estimated), respectively. Methylene chloride is a commonly used laboratory solvent and as such is often found as a laboratory contaminant. This, coupled with the historic non-use of this solvent during the tanning process, raises question as to the presence of this compound in the environmental samples collected.

The compound 2-butanone was detected in sample SB-14B at an estimated concentration of 12 ug/kg, while toluene was found at an estimated concentration of 8 ug/kg in SB-27B. The source of these two compounds is unknown.

Acetone, another common laboratory artifact, was identified in SB-19A and PW-4 at concentrations of 310 ug/kg and 2,000 ug/kg respectively. This compound was also identified in the trip blank associated with these samples. Typically, when a contaminant is found in the trip blank, all associated sample values less than ten times the amount found in the blank are considered non-detected at the reported concentration. In this instance, the reported sample concentrations were above the threshold value for reporting non-detect in the associated samples. While the values are reported, there is some question as to the presence of these compounds in the samples collected.

Sample SB-28BD (which is the duplicate sample of SB-28B) showed an estimated concentration of 8 ug/kg of TCE. The original sample, SB-28, reported that TCE was not present. With the sample not reporting the presence of TCE and the associated duplicate reporting the presence of TCE, the presence of this compound is questionable.

Analytical results and sample quantitation limits for all samples are presented in Table 6-4. Other VOCs were not detected in any of the other environmental samples collected in Area III.

6.4.2 Base-Neutral/Acid Extractables

At least one BNA was detected in 24 of the 35 samples collected within this area. The majority of the BNAs identified were polynuclear aromatic hydrocarbons (PNAs). In addition to the PNAs; bis(2-ethylhexyl)phthalate, a common laboratory contaminant, was identified in seven samples ranging from an estimated concentration of 100 ug/kg in SB-21A to 24,000 ug/kg in sample SB-24B. The level of bis(2-ethylhexyl)phthalate in sample SB-24 suggests that it is not a laboratory artifact and therefore is present in the sample. The source of bis(2-ethylhexyl)phthalate is unknown. However, this compound is commonly used as a plasticizer and found in numerous plastic based materials. Carbazole was identified in four of the samples collected. Carbazole concentrations ranged from an estimated concentrations of 180 ug/kg in SB-13B to 2,000 in SB-26B. Five samples were found to contain dibenzofuran at concentrations ranging from an estimated 81 ug/kg in sample SB-13B to an estimated 1,500 ug/kg in sample SB-26B. Pentachlorophenol and 2,4,5-trichlorophenol were found in sample PW-9 at concentrations of 240,000 ug/kg and 270,000 ug/kg respectively. The source of the carbazole, dibenzofuran, pentachlorophenol and 2,4,5-trichlorophenol are unknown.

The highest concentrations of the PNAs were observed in the north end of the production waste area. Polynuclear aromatic hydrocarbons concentrations in this area ranged from non-detected in several of the samples to 172,000 ug/kg in sample SB-15A. Elevated PNA concentrations coincide with the same sampling locations where elevated PCB readings were observed, indicating a relationship between elevated PNAs and PCBs within this portion of this area. Further support of this relationship is that the PNA concentrations tend to decrease with increasing sample depth, mirroring the PCB concentrations. In the remainder of Area III, as with the Areas I and II, PNA concentrations tended to increase or remain constant with deeper sampling intervals. Analytical results for the samples collected in Area III can be found in Table 6-4. Surficial and subsurficial total PNA distribution maps can be found as Figures 6-2 and 6-4.

6.4.3 Pesticides/PCBs

A variety of pesticides were identified in 31 of the 35 samples collected in this area. A total of 13 different pesticides were identified, they are as follows: beta-BHC, heptachlor, heptachlor epoxide, aldrin, dieldrin, DDT, DDE, DDD, endrin, endrin aldehyde, endrin ketone, and both alpha and gamma chlordane. It is possible that the pesticides were used by the tannery for rodent control during operations.

The pesticides were identified in both the surficial and subsurficial soils. In general, the pesticide concentrations tended to decrease with increasing depth, showing that the majority of the pesticides are either at or near the ground surface. The concentrations of pesticides found in this area were all at least 20 times less than those found in sample SB-39A, an Area I sample. The highest reported pesticide concentration was in SB-11BD at 2,400 ug/kg.

Polychlorinated biphenyls were found in 16 of the 38 samples collected within this area. Concentrations ranged from 240 ug/kg at SB-21B to 56,000 ug/kg at SB-10A. The PCBs, like the pesticides, tended to decrease in concentration with increasing sample depth, with the exception of SB-24. The highest concentrations found are located in an area within the north end of the production waste area. The predominant Aroclor reported was 1248 coupled with lesser quantities of Aroclor 1254. The source of the PCBs at this location as well as the other sampling locations is unknown.

Analytical results for the samples collected in this area can be found in Table 6-4. Surficial and subsurficial total pesticide distribution maps can be found as Figures 6-5 and 6-6. Surficial and subsurficial total PCB distribution maps can be found as Figures 6-7 and 6-8.

6.4.4 Inorganics

Arsenic values ranged from <10 mg/kg in 25 of the 35 samples to 164 mg/kg in SB-24B.

Mercury was not found in 4 of the 35 samples collected in this area. The maximum mercury concentration was 28.8 mg/kg in SB-14B.

This area was found to contain the three highest total lead values. Production Waste sample PW-4 contained 75,800 mg/kg, SB-12A contained 4,250 mg/kg and SB-15A contained 4,120 mg/kg total lead. For purposes of comparative analysis and Figure preparation, PW samples were considered isolated occurrences and not included as part of any generalized trends. Soil samples collected from SB-12 and SB-15 were the only two locations in this area found to contain over 700 mg/kg lead. As with the other areas, lead values tended to decrease with increased sampling depth. Figure 6-9 provides a surficial distribution of lead concentrations in excess of 1,000 mg/kg. A subsurficial map was not prepared for lead because there were three locations found to contain lead above the 1,000 mg/kg limit: SB-01B - 1,520 mg/kg; SB-09B - 1,260 mg/kg; and SB-15B - 1,610 mg/kg.

Chromium was detected at a maximum concentration of 25,500 mg/kg in SB-23B. Chromium concentrations within this area tended to drop significantly with increasing sampling depth. The average chromium concentration throughout this area is 3,700 mg/kg and is concentrated mainly in the area of, and adjacent to, the production waste samples. Overall, the highest chromium value was found in PW-4 at 63,100 mg/kg. Figures 6-10 and 6-11 provide a surficial and subsurficial distribution of chromium.

Analytical results for the TAL analytes identified in this area can be found in Table 6-4.

6.5 PRODUCTION WASTE TCLP SAMPLES

In an effort to characterize the production wastes (PW), nine samples were collected from both partially contained (deteriorating drums) and non-contained sources. The samples were collected from various location in Areas IV and V. The following depicts the physical descriptions of the production waste samples when collected in the field.

- PW-1: Red beads apprcximately the size of medium sand. This material was located under a pile of fiberglass.
- PW-2: White, clay-like material.
- PW-3: Red sandy-like material collected from a corroded 55-gallon drum in a pile of other drums.
- PW-4: Orange colored solid material collected from a 5-gallon rusted pail.
- PW-5: Tan fibrous material (remnants of hide material) located just north of the southern fence-line of Area V.
- PW-6: Black material located inside of a 1.5 foot long by 7 inches wide steel canister.
- PW-7: Grey-black cinder like material in appearance.
- PW-8: A very corroded 55-gallon drum with incinerated waste materials.

- PW-9 - Grey, white, and pink hide material with a slight odor from an almost completely corroded drum.

The nine production waste samples were collected within the boundaries of Area III. These samples were analyzed to determine if any of the constituent concentrations exceeded the Toxicity Characteristic Leaching Procedure (TCLP) regulatory limits found in 40 CFR 261.24.

Of the nine samples collected, three of the samples exceeded the regulatory limits. The extract for PW-4 was found to contain 66.9 mg/l lead, in excess of the 5.0 mg/l limit. The regulatory limit for chromium, 5.0 mg/l, was exceeded in samples PW-5 and PW-9 with concentrations of 8.06 mg/l and 24.2 mg/l, respectively. There were no other concentrations reported above the regulatory limits.

The exceedance of TCLP regulatory limits does not imply that all production waste material is hazardous. An additional study of chromium's valance states (Cr^{+3}, Cr^{+6}) will determine the pursuance of the chromium waste exclusion, as stated in 35 IAC 721.104 (b)(6), as it pertains to tannery waste streams.

Analytical results for all TCLP parameters are presented in Table 6-5.

CHAPTER 7.0
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

7.1 SUMMARY AND CONCLUSIONS

The magnetometry survey indicated elevated magnetic gradients located within the entire survey grid. Two elevated gradients were noted in the northeast corner and southeast corner of the survey grid indicating a higher concentration of buried ferromagnetic material.

The geotechnical survey indicated that all samples collected were non-plastic and consisted mainly of sand. Sand percentages ranged from 33% (MW-1, 6 - 8') to 81.8% (MW-1, 8 - 10'). Only one sample (MW-1, 6 - 8') indicated a higher percentage of silt, 58.9%, in its matrix.

The extent of impact on the subsurface soil varies throughout the three designated areas; Areas I, II, and III. Within these areas, volatile organic compounds were of little consequence. Base-Neutral/Acid Extractable compounds (BNAs), pesticides/PCBs, and metals had a greater environmental impact across the site. Base-Neutral/Acid Extractable compounds, mostly polynuclear aromatic hydrocarbons (PNAs), were detected sporadically across the site and in the background (upgradient) soil samples. Total PNA concentrations ranged from non-detected to 60,100 ug/kg in SB-33B. Base-Neutral/Acid Extractable concentrations ranged from non-detected to 270,000 ug/kg, PW-9. The origin of the BNA compounds could not be discerned.

A variety of pesticides were identified in the soil samples collected in all three areas. It is possible that the pesticides were used for rodent control. Most of the pesticides were located in areas where tannery waste materials (water, hides) were disposed or were part of the wastewater stream, specifically Areas II and III. An isolated location in areas impacted by pesticides could be due to a historic surficial spill. Pesticide concentrations ranged from non-detected to 48,000 ug/kg, SB-39A, Area I.

Polychlorinated biphenyls were detected in Area III in concentrations ranging from 240 ug/kg (SB-21B) to 56,000 ug/kg (SB-10A). The highest concentration of PCBs are confined to an area located in the north end of the production waste disposal area. PCBs were not historically used in the tannery process.

Numerous inorganic analytes were identified in the soil samples collected from Areas II and III. The principal analytes of concern were chromium and lead. Lead levels were generally found in concentrations at least 10 - 100 times less than the total chromium levels. Generally, the aerial extent of lead corresponded with the aerial extent of chromium.

Inorganic analysis indicated that chromium was prevalent in both surficial and subsurficial soil samples. Chromium, used in the tannery process as a chrome liquor, was distributed throughout Areas II and III via the wastewater discharge areas (settling ponds, sluice areas, ditch, bermed lowland ares) and by the disposal of scrap hides throughout these two areas. Chromium was detected at a maximum concentration of 81,900 mg/kg. Approximately 16 acres (712,000 square feet) of the site is impacted by chromium. Using a vertical depth of 4-feet (depth to the approximate static water level) of impacted soil and multiplying it with the approximate square footage of impacted area (712,800 square feet), equates to 105,600 cubic yards of potentially chromium impacted material.

Groundwater analytical results indicated that the levels established for Class I Groundwater in Illinois Administrative Code (IAC) Title 35, Subpart D, Section 620.410, were not exceeded for VOCs, Pesticides/PCBs, or BNAs. Additionally, chromium did not exceed the regulatory value for Class I Groundwater Regulatory Limits. Arsenic was detected over the Class I Groundwater Standard, 50 ug/l, in one monitoring well. Lead was also identified in one monitoring well at a concentration of 40.7 ug/l, above the Class I Standard of 7.5 ug/l. However, the presence of lead in the groundwater is questionable because the duplicate sample collected was reported at less than 2.4 ug/l. Manganese, iron, and Total Dissolved Solids (TDS) exceeded the Class I Groundwater Regulatory Limits. However, these levels are considered naturally occurring because the background (upgradient) levels also exceeded the Class I Standards.

Generally, the constituents present in the surface and subsurface soil have not impacted the groundwater.

Of the nine Production Waste samples collected and analyzed for TCLP parameters, three were deemed hazardous because they exceeded the regulatory limits. For disposal purposes, two production waste samples maintain the Hazardous Waste Number D007 (Chromium) and one Production Waste sample maintains the Hazardous Waste Number D008 (Lead).

7.2 RECOMMENDATIONS

Base on the current site characterization data, M&E recommends the following:

Phase II Investigation

- Conduct additional field work as part of a Phase II investigation before performing a baseline Risk Assessment. The purpose of the Phase II activities will be to better delineate or define the boundaries of surface and subsurface impact. This further delineation will aid in the determination of volume of impacted area so the remedial alternatives can be refined. Additionally, Phase

II activities are recommended to determine if off-site areas have been impacted by former tannery operations.

- Install several deeper monitoring wells to determine if deeper stratigraphic units or groundwater bearing zones have been impacted from past tannery operations.

- Collect a second round of groundwater samples from all seven monitoring wells. This additional groundwater data will help to confirm the presence or absence of constituents of concern in the groundwater.

- Reduce the investigation analyte list for both soil and groundwater in Phase II (e.g. only sample those parameters which were detected in elevated levels during the first phase of the RI).

- Collect soil samples and analyze for select inorganic TCLP parameters, specifically chromium, lead, mercury, and arsenic. These analyses will aid in the determination of whether the material should be treated as a hazardous waste. This will also help in the selection of remedial alternatives.

- Analyze for hexavalent chromium to differentiate the speciation of the valence states during Phase II activities of the RI. Chromium, can be present in the surface and subsurface in two valence states with different toxicities; trivalent chromium (Cr^{+3}) and hexavalent chromium (Cr^{+6}).

- As determined during the Remedial Investigation, three production waste samples exceeded TCLP regulatory levels; two samples exceeded the limit for chromium and one sample exceeded the limit for lead.

  The samples which exceeded the TCLP chromium level, PW-5, and PW-9, represent partially decomposed hide material, much of which is buried. Prior to addressing removal, these materials should be characterized in terms of the valence state of the chromium, and the extent to which the buried hide wastes exist on site.

  Speciation of the valence states during the Phase II study parameters will assist in the pursuance of the chromium waste exclusion, as stated in 35 IAC 721.104 (b)(6), as it pertains to tannery waste streams.

  The sample which exceeded the TCLP for lead, PW-4, represents a small quantity of a solid orange material which appears to have once been containerized in now deteriorated five gallon cans. This waste, which appears to be localized to a small surface location, should be removed from the site in an appropriate manner.

Baseline Risk Assessment

- Conduct a Baseline Risk Assessment. By definition, a baseline Risk Assessment is an analysis of the potential adverse effects (current or future use) caused by hazardous substance releases from the site in absence of any actions to control or mitigate these releases (reference). The result of the risk assessment for the former tannery will be used to document the magnitude of risk at the site, determine what actions are necessary, and aid in developing remediation goals. The scope of the risk assessment will be directed at potential risks to human health and the environment posed by exposure to impacted soil and groundwater. Chemicals of potential concern will consist of a detailed evaluation of the analytical data, analysis of sources of environmental impacts and site characteristics, and a review of potential migration pathways. The Risk Assessment should be conducted in accordance with applicable Risk Assessment guidelines. An ecological Risk Assessment should also be conducted as part of the Baseline Risk Assessment because the site is located within sensitive areas (wetlands). An Ecologic Risk Assessment is a process which evaluates the likelihood of adverse ecological effects that may occur as a result of exposure. The Ecological Risk Assessment is designed to detect existing risks or forecast the risk of stress.

SECTION 8.0
REFERENCES

Berg, Richard C., and John P. Kempton, 1988, Stack-Unit Mapping of Geologic Materials in Illinois to a Depth of 15 Meters, Circular 542, Illinois State Geological Survey, Illinois Department of Energy and Natural Resources, Champaign, Illinois.

Berg, Richard C., John P. Kempton, and Keros Cartwright, 1984, Potential for Contamination of Shallow Aquifers in Illinois, Circular 532, State Geological Survey Division, Illinois Department of Energy and Natural Resources, Champaign, Illinois.

Sheaffer, John R., and Arthur J. Zeizel, 1966, The Water Resource in Northeastern Illinois: Planning Its Use, Technical Report No. 4, Northeastern Illinois Planning Commission, Chicago, Illinois.

Singh, Krishan P., Ph.D., P.E., and J. Rodger Adams, Ph.D., 1980 Adequacy and Economics of Water Supply in Northeastern Illinois: Proposed Groundwater and Regional Surface Water Systems, 1985-2010, Illinois State Water Survey, Illinois Institute of Natural Resources, Urbana, Illinois.

Visocky, Adrian P., Marvin G. Sherrill, and Keros Cartwright, 1985, Geology, Hydrology, and Water Quality of the Cambrian and Ordovician Systems in Northern Illinois, Cooperative Groundwater Report 10, Illinois State Geological Survey and Illinois State Water Survey, Illinois Department of Energy and Natural Resources, Champaign, Illinois.

Willman, H.B., 1971, Summary of the Geology of the Chicago Area, Circular 460, Illinois State Geological Survey, Illinois Department of Registration and Education, Urbana, Illinois.

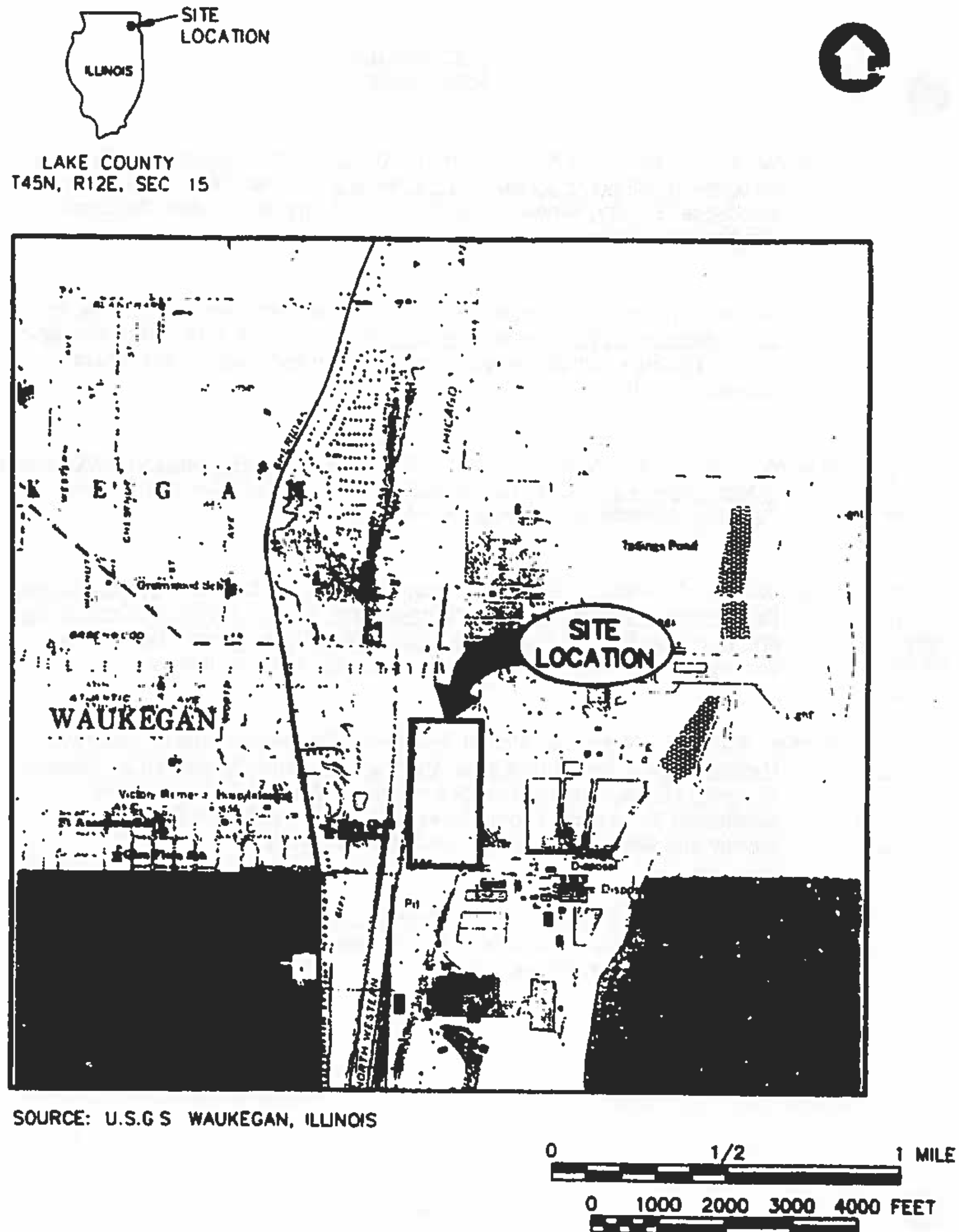
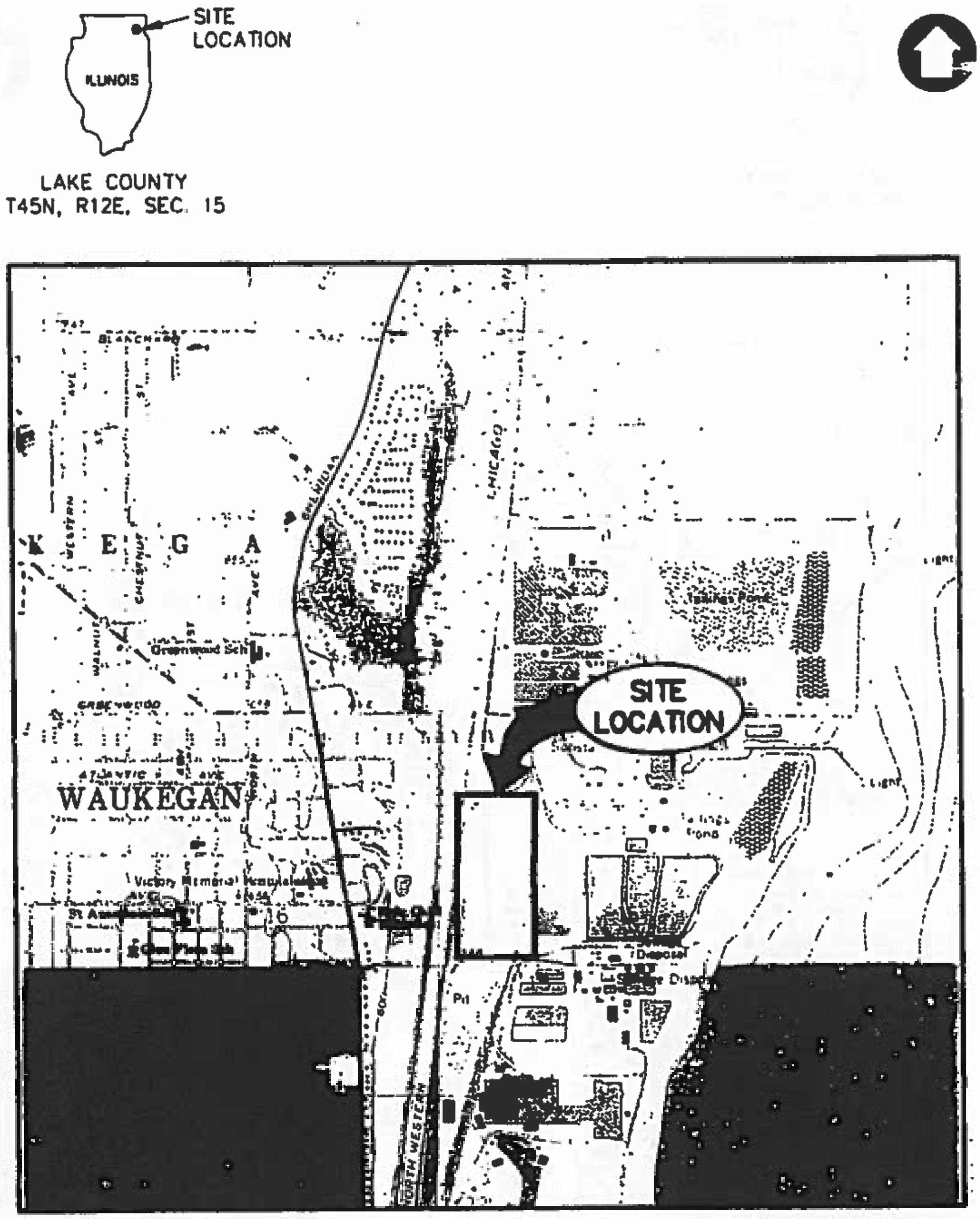


FIGURE 2-1
SITE LOCATION MAP
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

METCALF & EDDY

MWG13-15_47133



SOURCE: U.S.G.S. WAUKEGAN, ILLINOIS

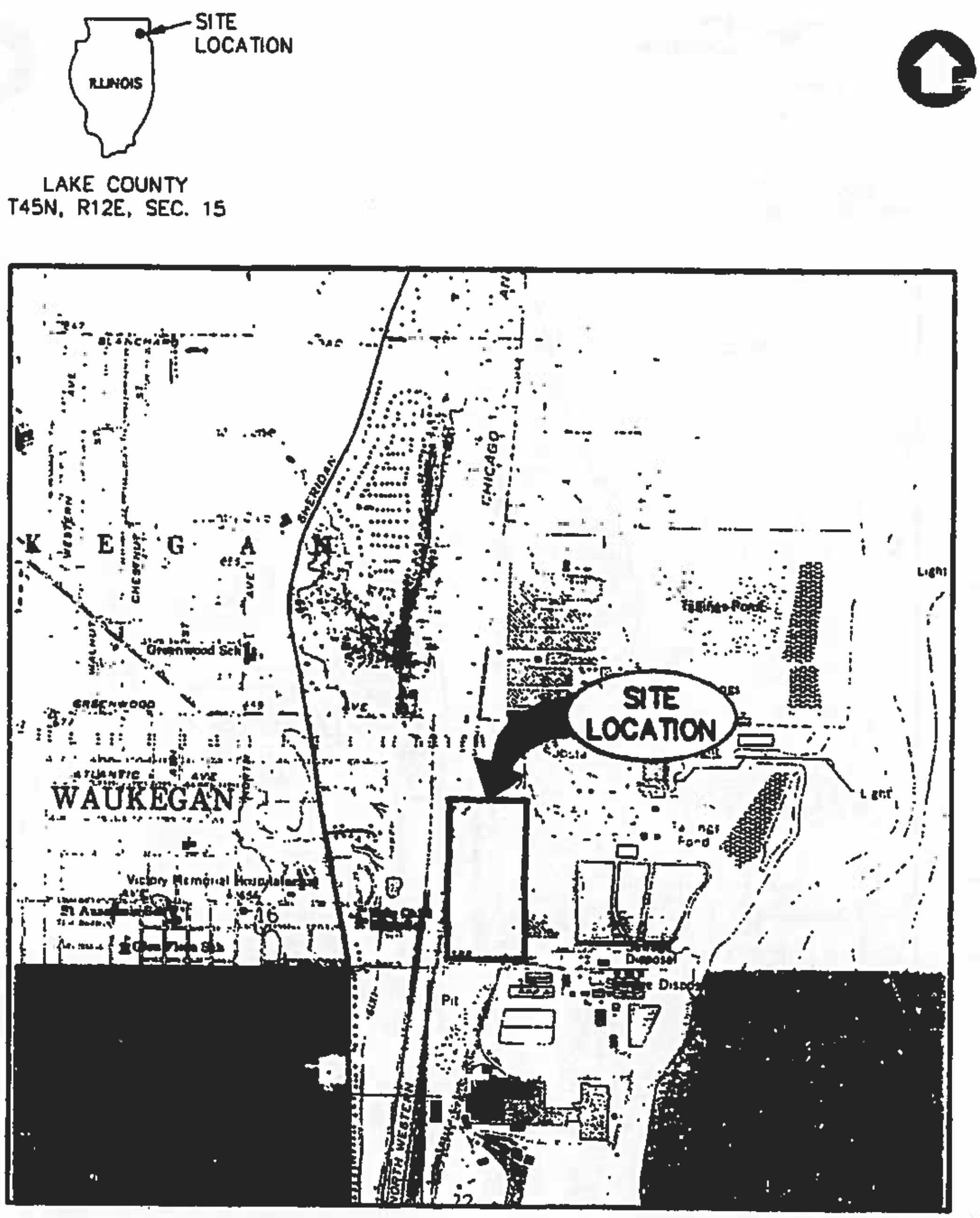
0 1/2 1 MILE

0 1000 2000 3000 4000 FEET

SCALE 1:24000

FIGURE 2-1
SITE LOCATION MAP

COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS



SOURCE: U.S.G.S. WAUKEGAN, ILLINOIS

0 1/2 1 MILE

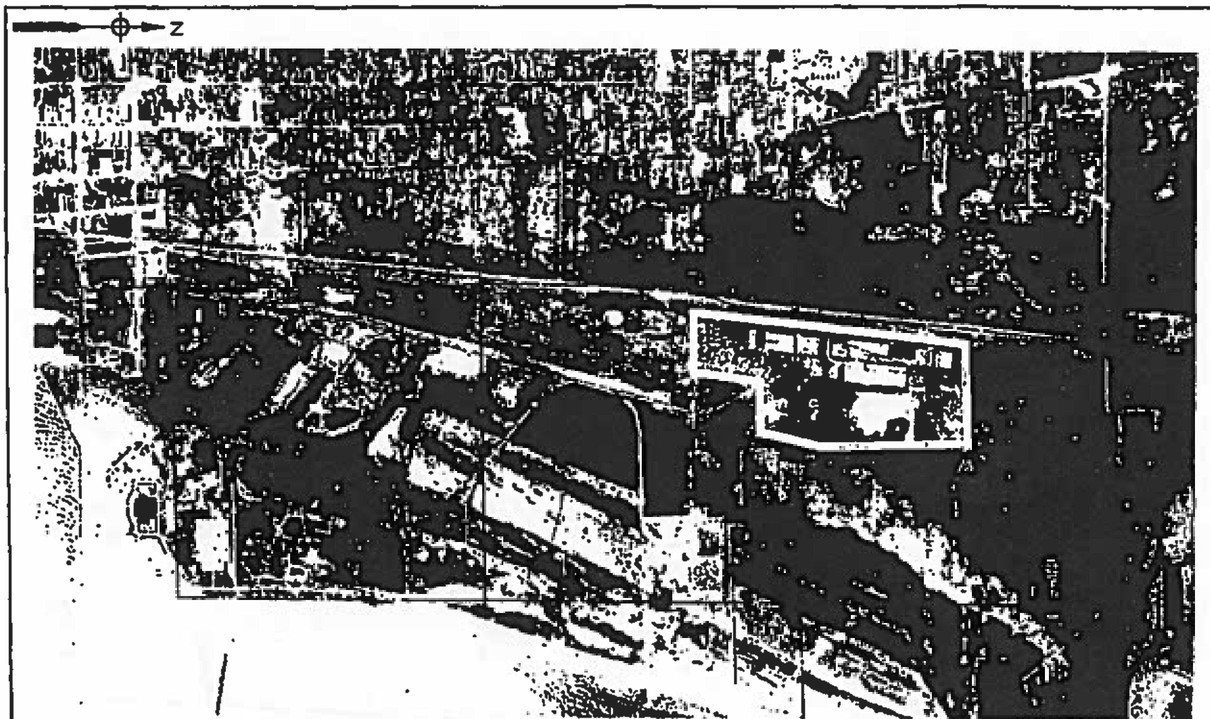
0 1000 2000 3000 4000 FEET

SCALE 1:24000

FIGURE 2-1
SITE LOCATION MAP

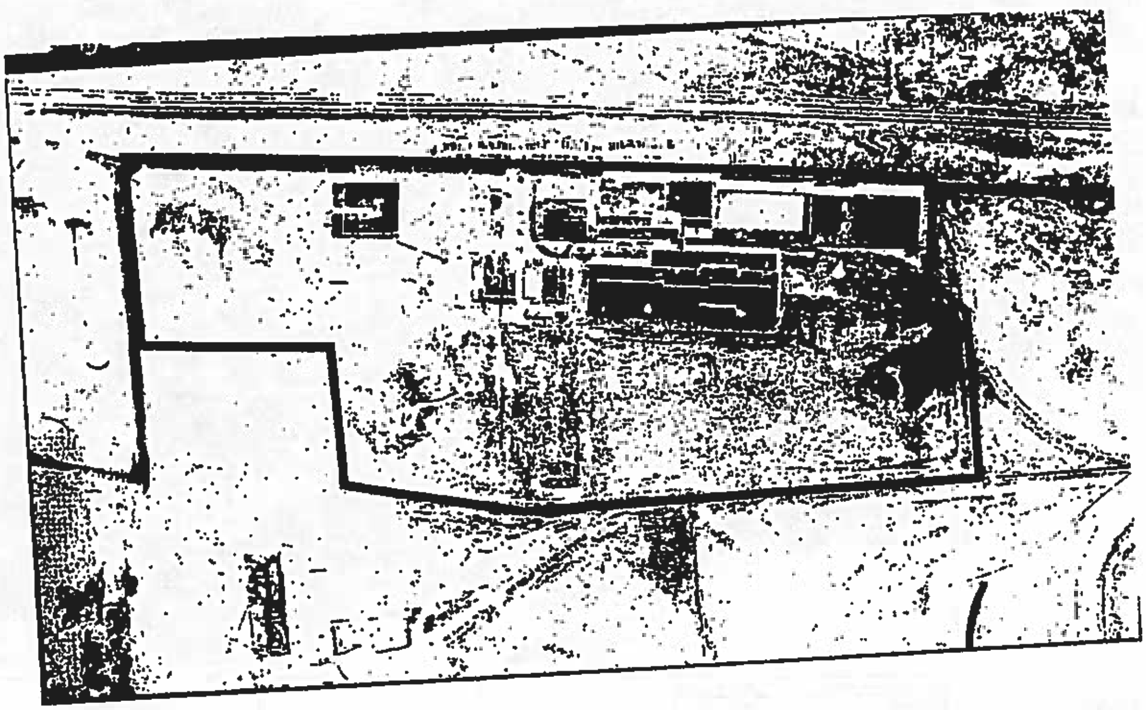
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

METCALF & EDDY

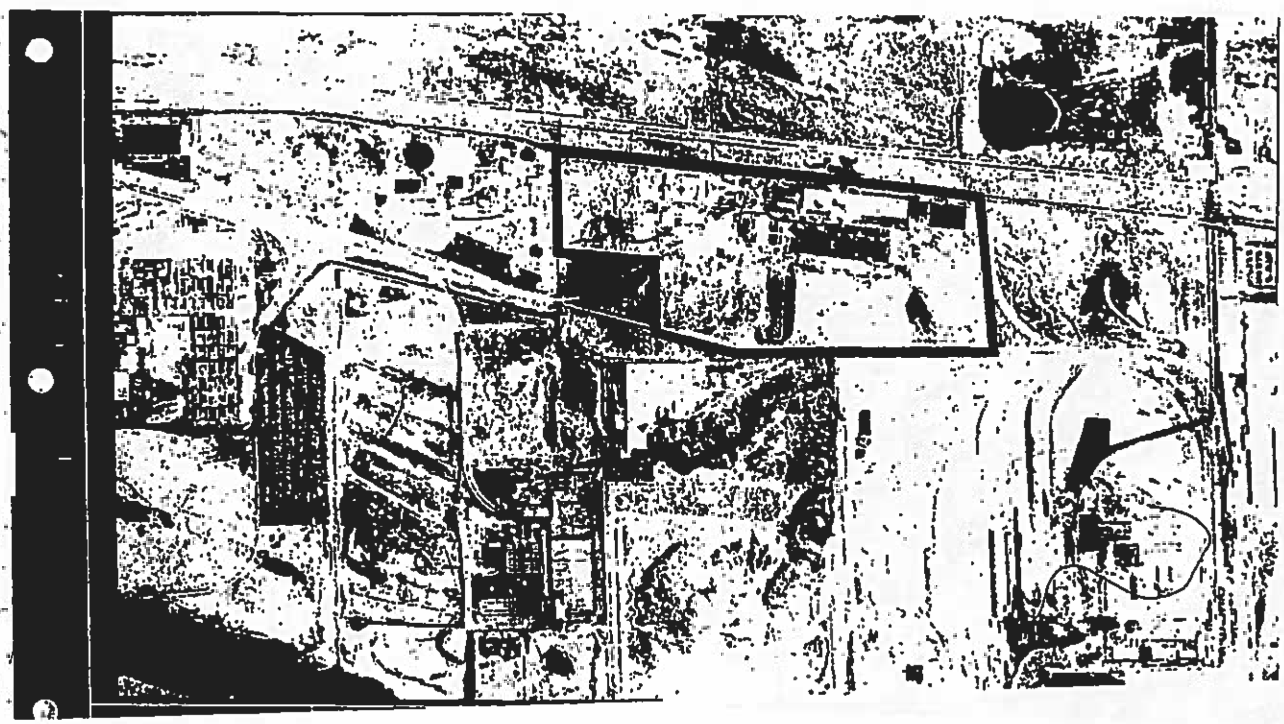


METCALF & EDDY

FIGURE 2-2
1939 AERIAL PHOTOGRAPH
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS



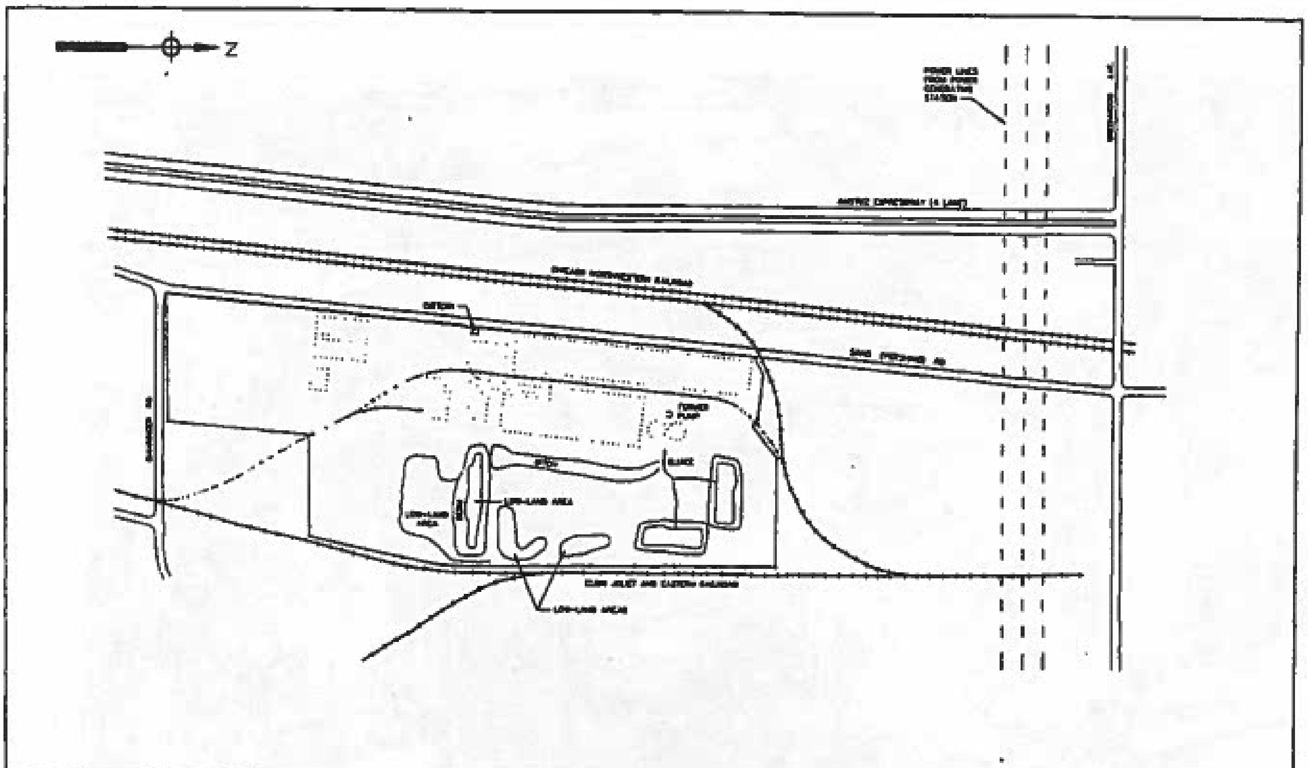
MWG13-15_47137



MWG13-15_47139

M&E METCALF & EDDY	DRAWN BY:	DATE:	FIGURE 2-5 1970 AERIAL PHOTOGRAPH COMMONWEALTH EDISON COMPANY FORMER GRIESS-PFLEGER TANNERY WAUKEGAN, ILLINOIS
	CHECKED BY:	DATE:	
	APPROVED BY:	DATE:	
	FILE NO.:		

MWG13-15_47140

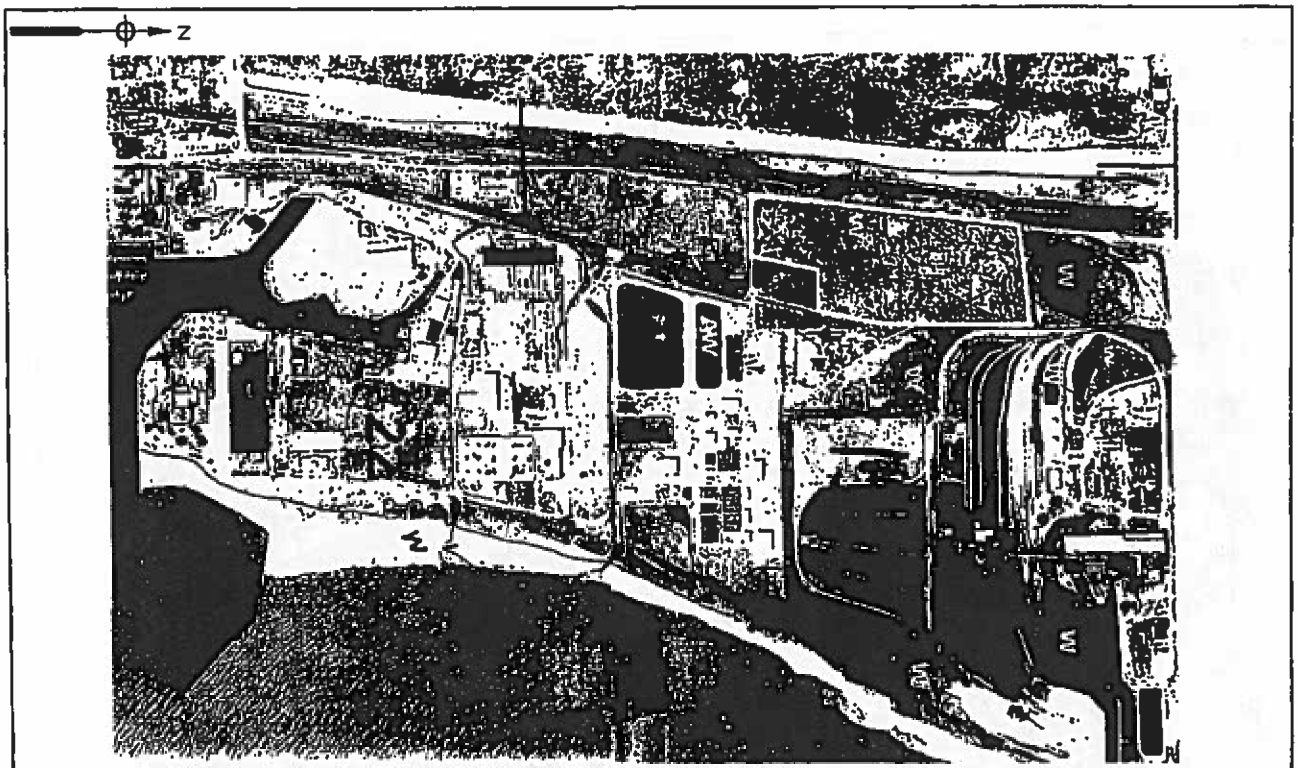


METCALF & EDDY

0 150 300 600
APPROXIMATE SCALE IN FEET

LEGEND

FIGURE 3-1
SITE LOCATION MAP
COMMONWEALTH EDISON COMPANY
FORMER GRESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS



METCALF & EDDY

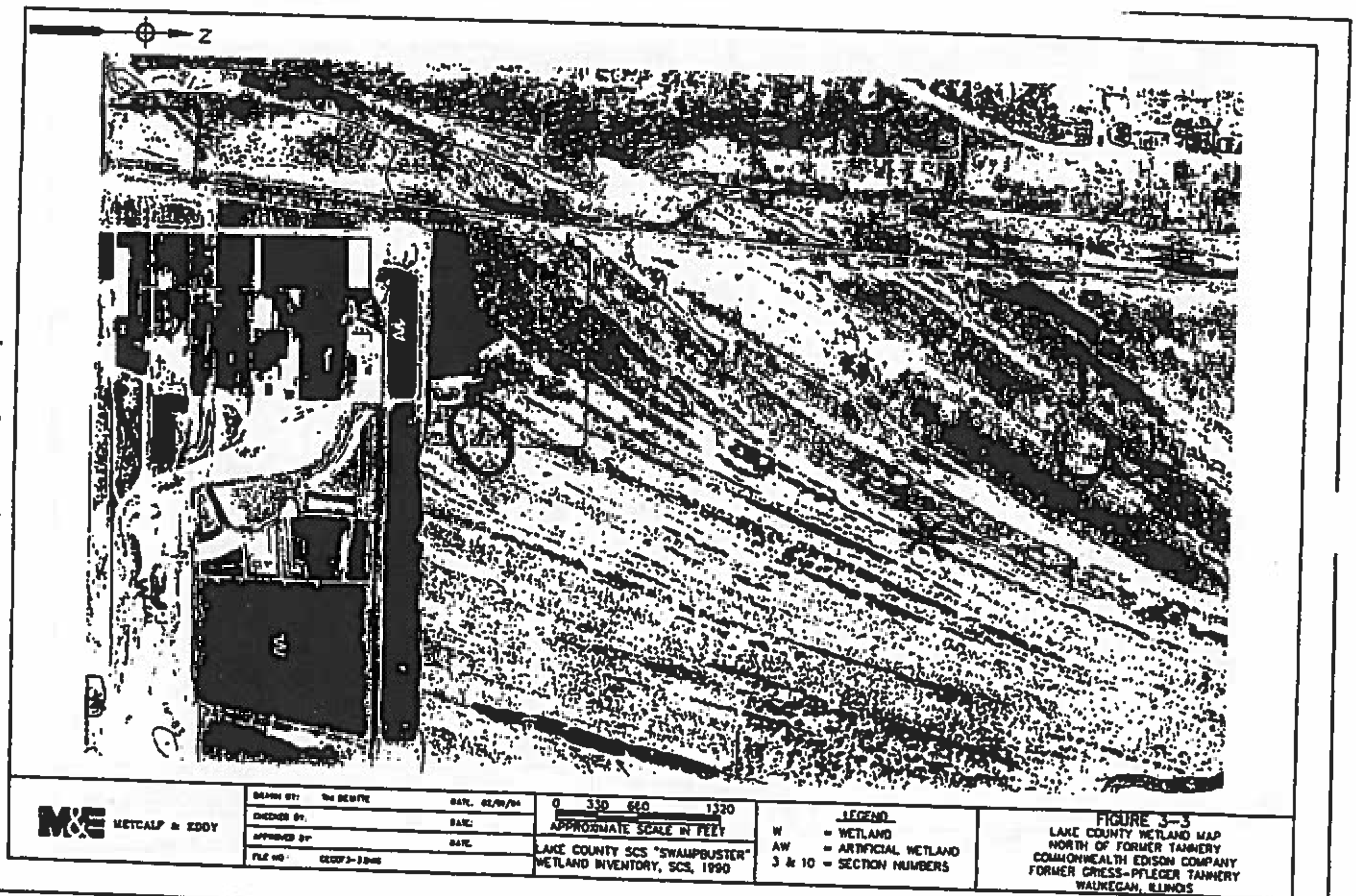
DRAWN BY: | DATE:
CHECKED BY: | DATE:
APPROVED BY: | DATE:
FILE NO.:

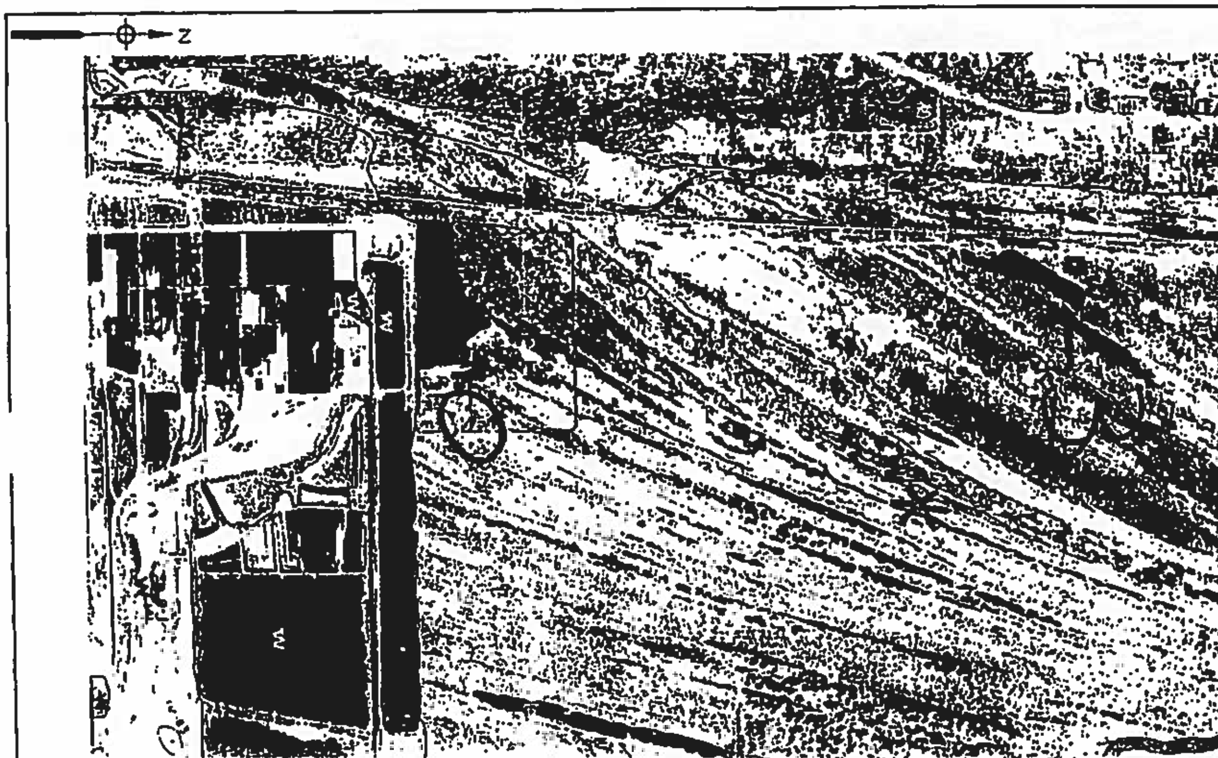
0 330 660 1320
APPROXIMATE SCALE IN FEET

LAKE COUNTY SCS "SWAMPBUSTER" WETLAND INVENTORY, SCS, 1990

LEGEND
W = WETLAND
AW = ARTIFICIAL WETLAND
15 & 22 = SECTION NUMBERS

FIGURE 3-2
LAKE COUNTY WETLAND MAP
FORMER TANNERY AND SURROUNDING AREAS
COMMONWEALTH EDISON COMPANY
FORMER GREISS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

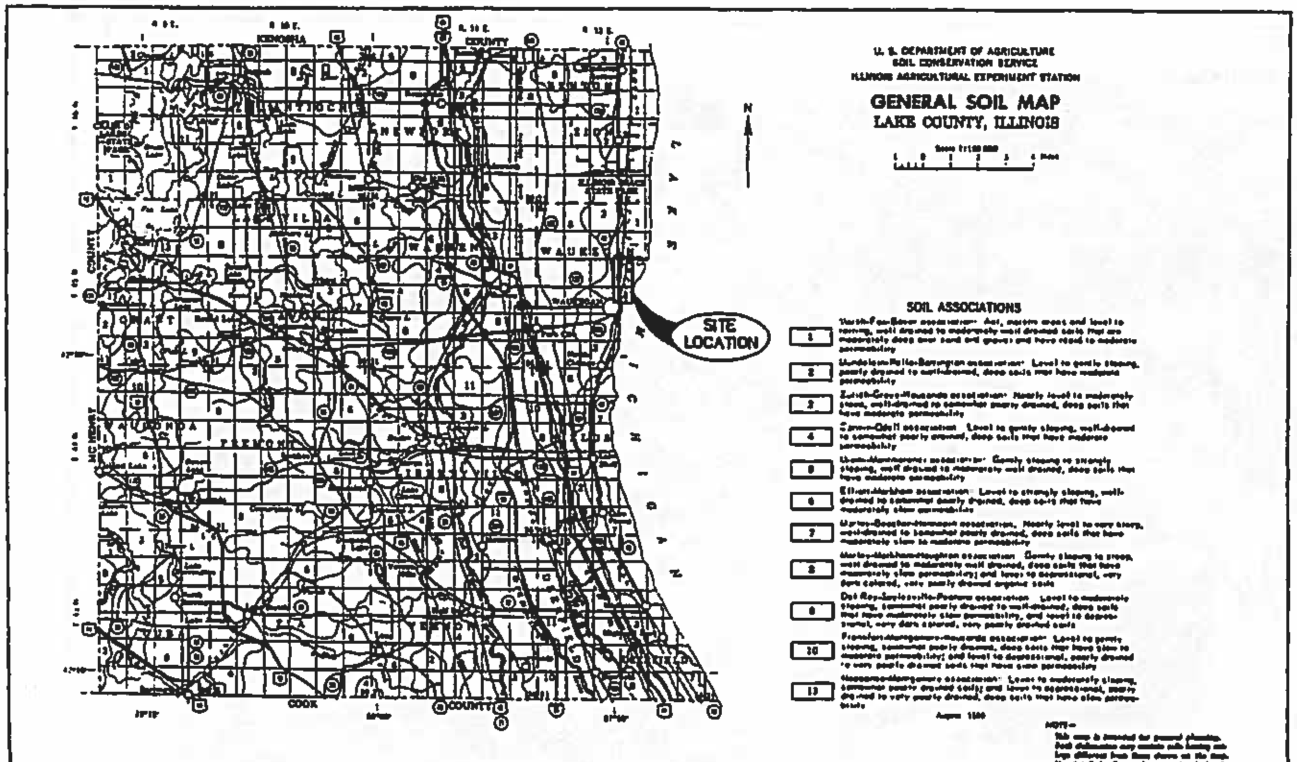

N
W
AW
M&E METCALF & EDDY
0 330 660 1320
APPROXIMATE SCALE IN FEET
LAKE COUNTY SCS "SWAMPBUSTER" WETLAND INVENTORY, SCS, 1990
LEGEND
W = WETLAND
AW = ARTIFICIAL WETLAND
3 & 10 = SECTION NUMBERS
FIGURE 3-3
LAKE COUNTY WETLAND MAP
NORTH OF FORMER TANNERY
COMMONWEALTH EDISON COMPANY
FORMER GREISS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS



M&E METCALF & EDDY	DRAWN BY: DATE: / CHECKED BY: DATE: / APPROVED BY: DATE: / FILE NO:	0 330 660 1320 APPROXIMATE SCALE IN FEET LAKE COUNTY SCS "SWAMPBUSTER" WETLAND INVENTORY, SCS, 1990	LEGEND W = WETLAND AW = ARTIFICIAL WETLAND 3 & 10 = SECTION NUMBERS

FIGURE 3-3
LAKE COUNTY WETLAND MAP
NORTH OF FORMER TANNERY
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

MWG13-15_47144



METCALF & EDDY

FIGURE 3-4
GENERAL SOILS MAP
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

MWG13-15_47145

SYMBOL		SOIL NAME
ML	=	MADE LAND
MA	=	MARSH
V54	=	PLAINFIELD VAR. SEVERE SANDY, SLIGHTLY ACID VARIANT (1 TO 4 PERCENT SLOPES
367	=	BEACH SAND
513	=	GRANBY LOAMY FINE SAND (MARSH NEAR AREAS OF LAKE MICHIGAN
25G	=	HENNEPIN LOAM 30 TO 60 PERCENT SLOPES
698A	=	GRAYS SILT LOAM (0 TO 2 PERCENT SLOPES)
698B	=	GRAYS SILT LOAM (2 TO 4 PERCENT SLOPES

1/2 1/4 0 1/2 MILE

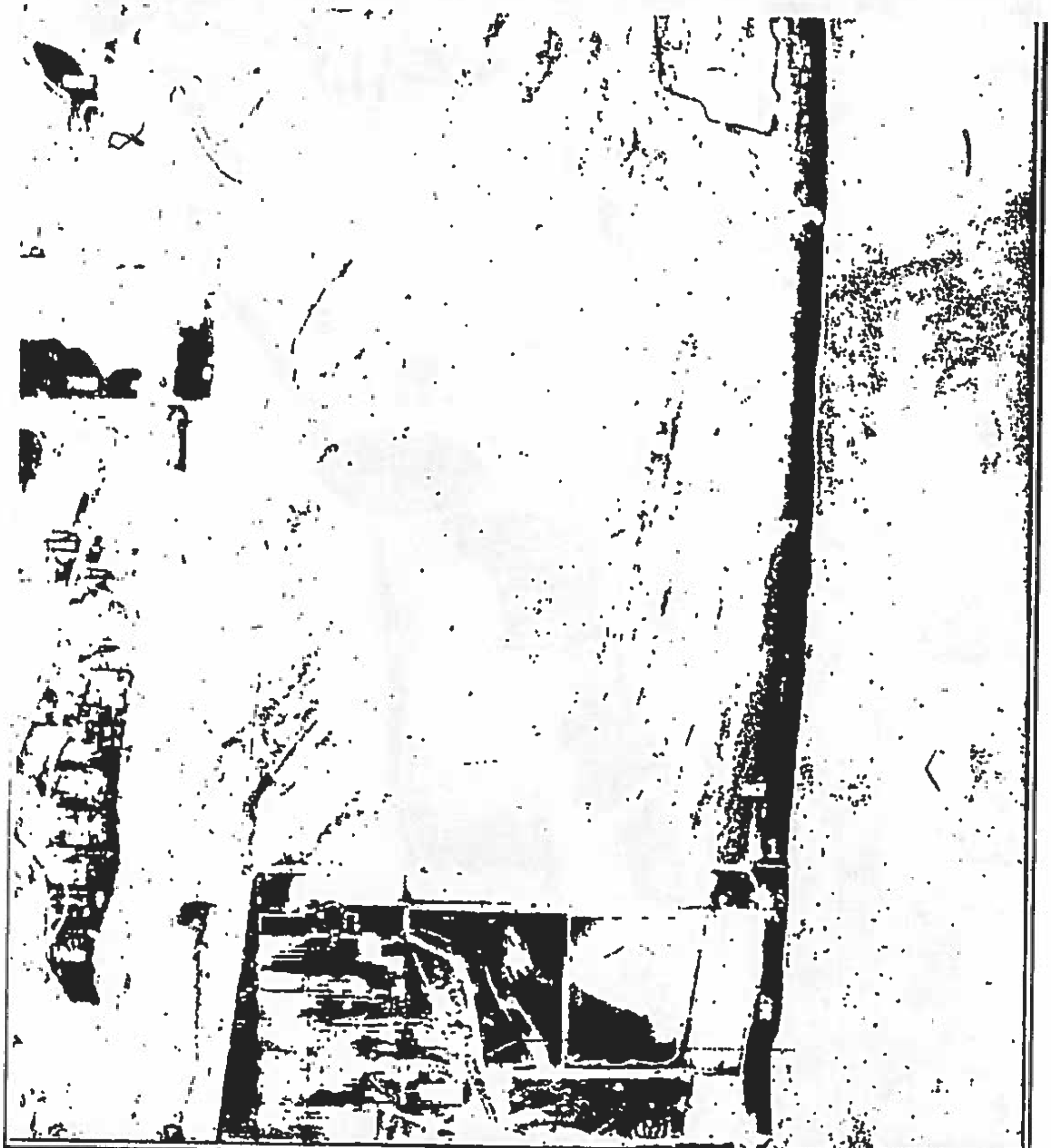
2000 1000 0 2000 FEET

SCALE 1 : 15840

FIGURE 3–5
SOIL TYPES – FORMER TANNERY AND SURROUNDING AREAS

COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

METCALF &



MAP SYMBOL		SOIL NAME
ML	=	MADE LAND
MA	=	MARSH
V54	=	PLAINFIELD VAR SEVERE SAND, SLIGHTLY ACID VARIANT ... TO 4 PERCENT SLOPE
367	=	BEACH SAND
513	=	GRANBY LOAMY FINE SAND MARSH NEAR AREAS OF LAKE MICHIGAN
25G	=	HENNEPIN LOAM (30 TO 60 PERCENT SLOPES)
698A	=	GRAYS SILT LOAM (0 TO 2 PERCENT SLOPE)
698B	=	GRAYS SILT LOAM (2 TO 4 PERCENT SLOPE)

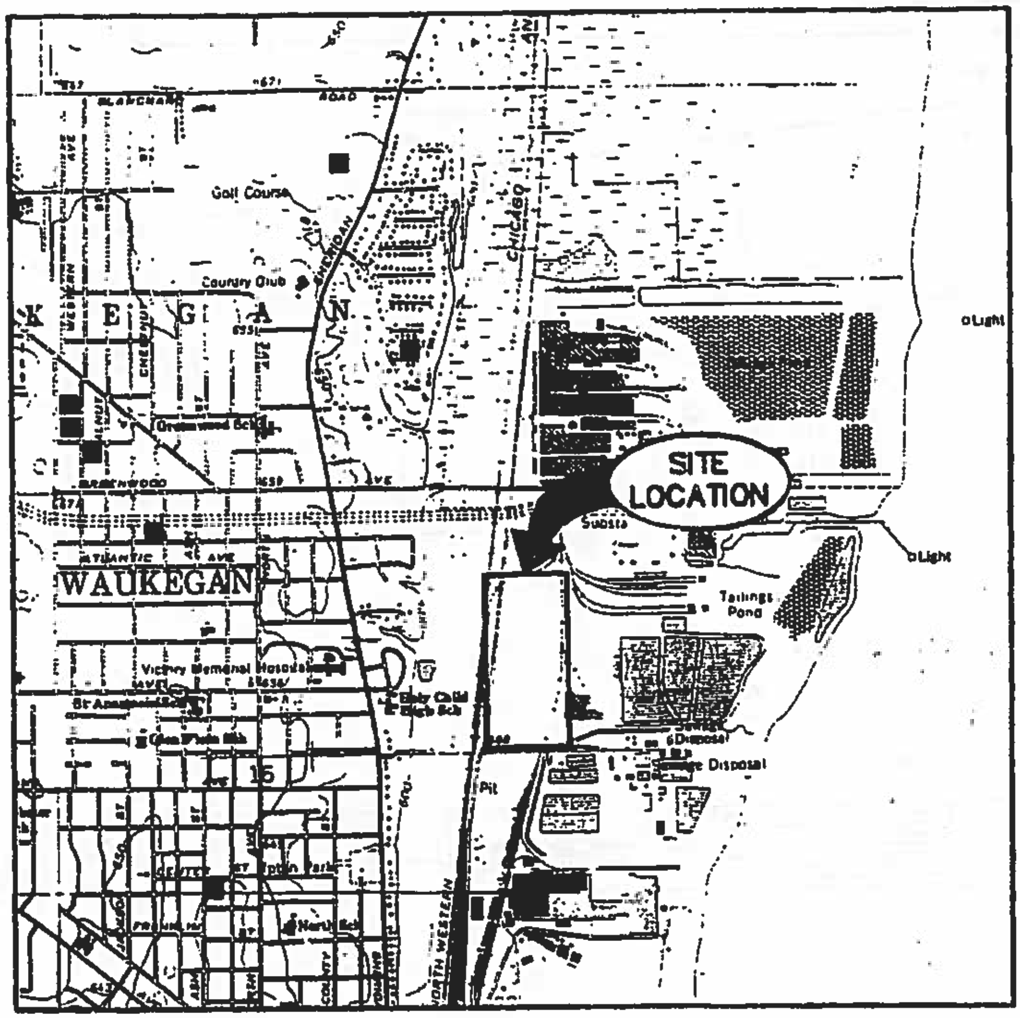
1/2 1/4 0 1/2
2000 1000 0 2000 FEET
SCALE 1 : 15840

FIGURE 3-6
SOIL TYPES – NORTH OF THE FORMER TANNERY

COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

METCALF &

LAKE COUNTY
T45N, R12E, SEC. 15



SOURCE: U.S.G.S. WAUKEGAN, ILLINOIS 1980 AND ILLINOIS STATE WATER SURVEY

■ = PRIVATE WELL LOCATION

0 1/2 1 MILE

0 1000 2000 3000 4000 FEET

SCALE 1:24000

FIGURE 3-7
WELL LOCATION MAP

COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

ECOF3-7.DWG

METCALF & EDDY

MWG13-15_47148

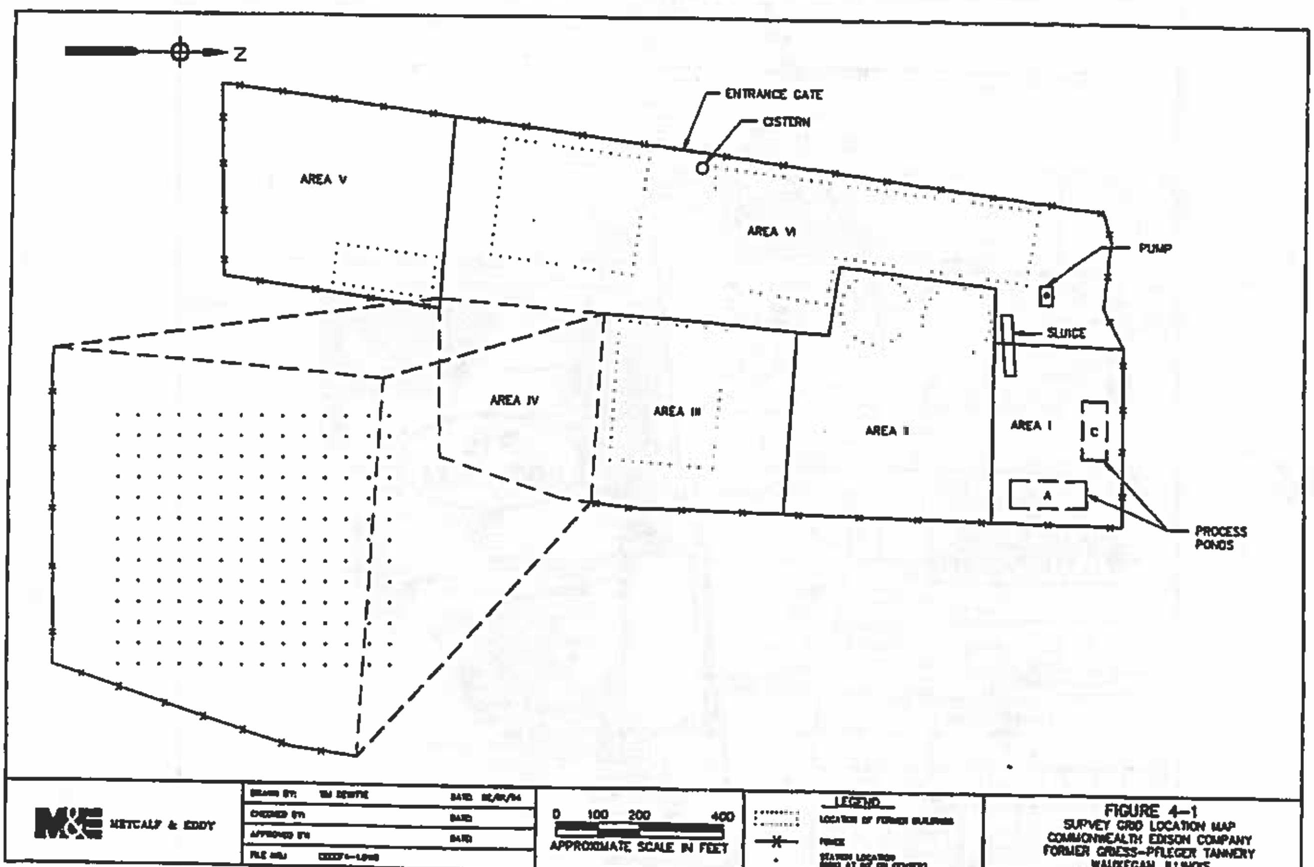
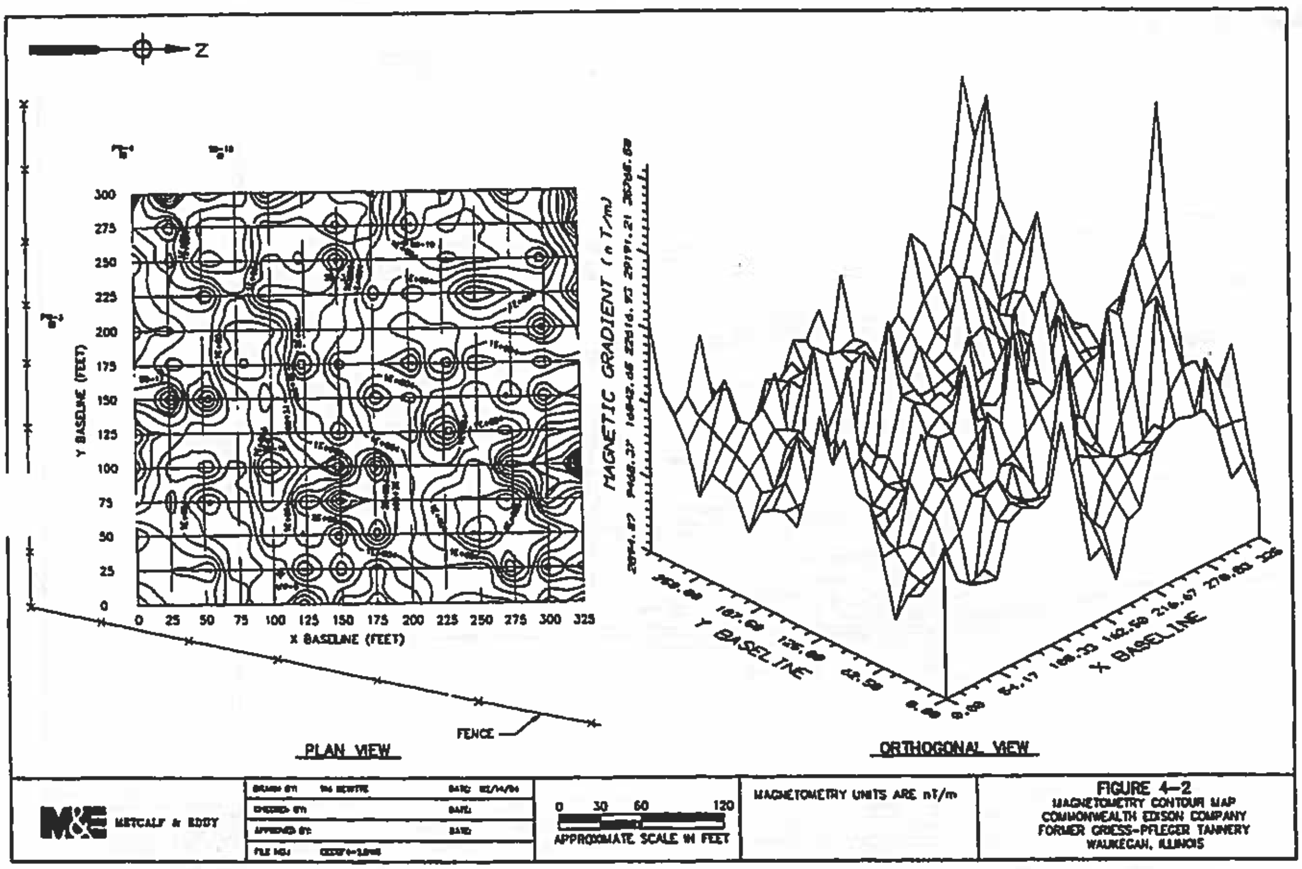
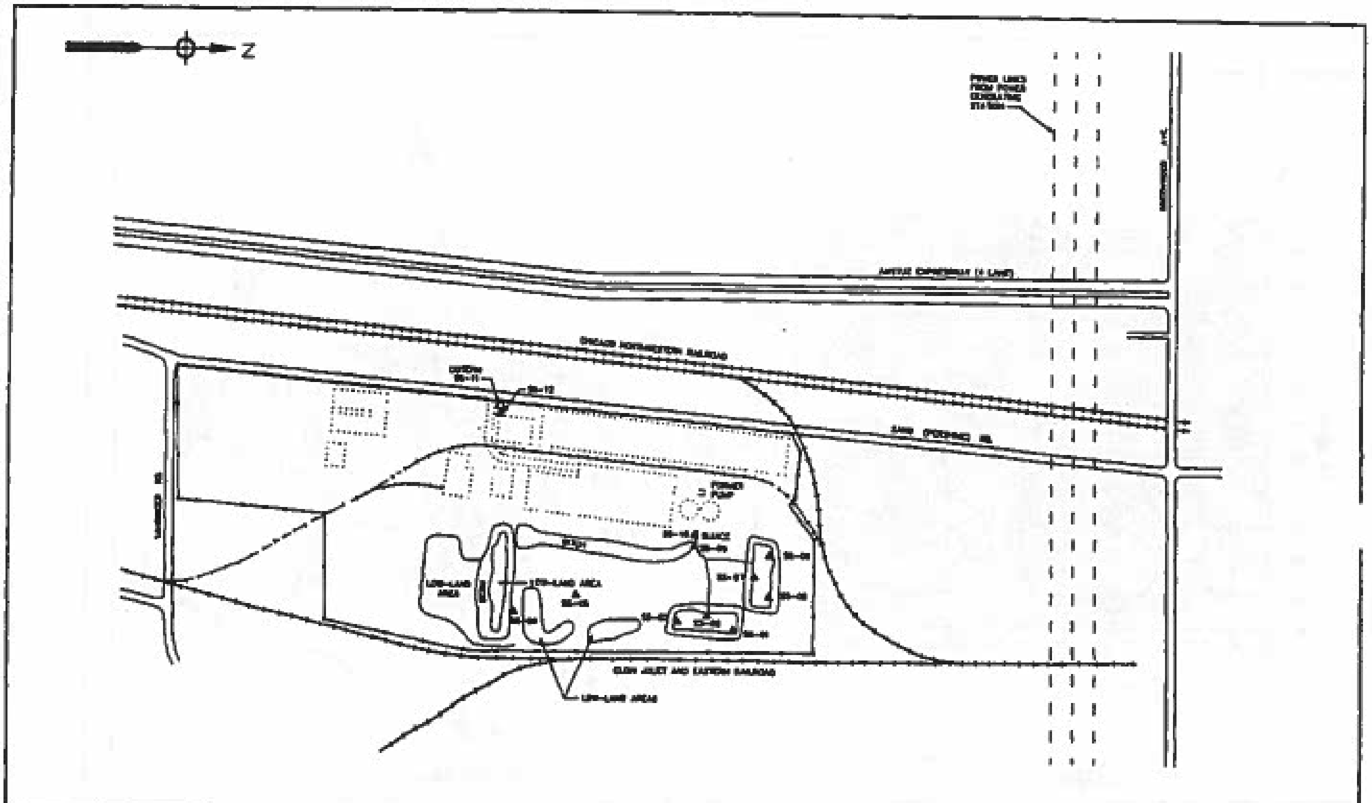


FIGURE 4-1
SURVEY GRID LOCATION MAP
COMMONWEALTH EDISON COMPANY
FORMER GREISS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

MWG13-15_47149



MWG13-15_47150



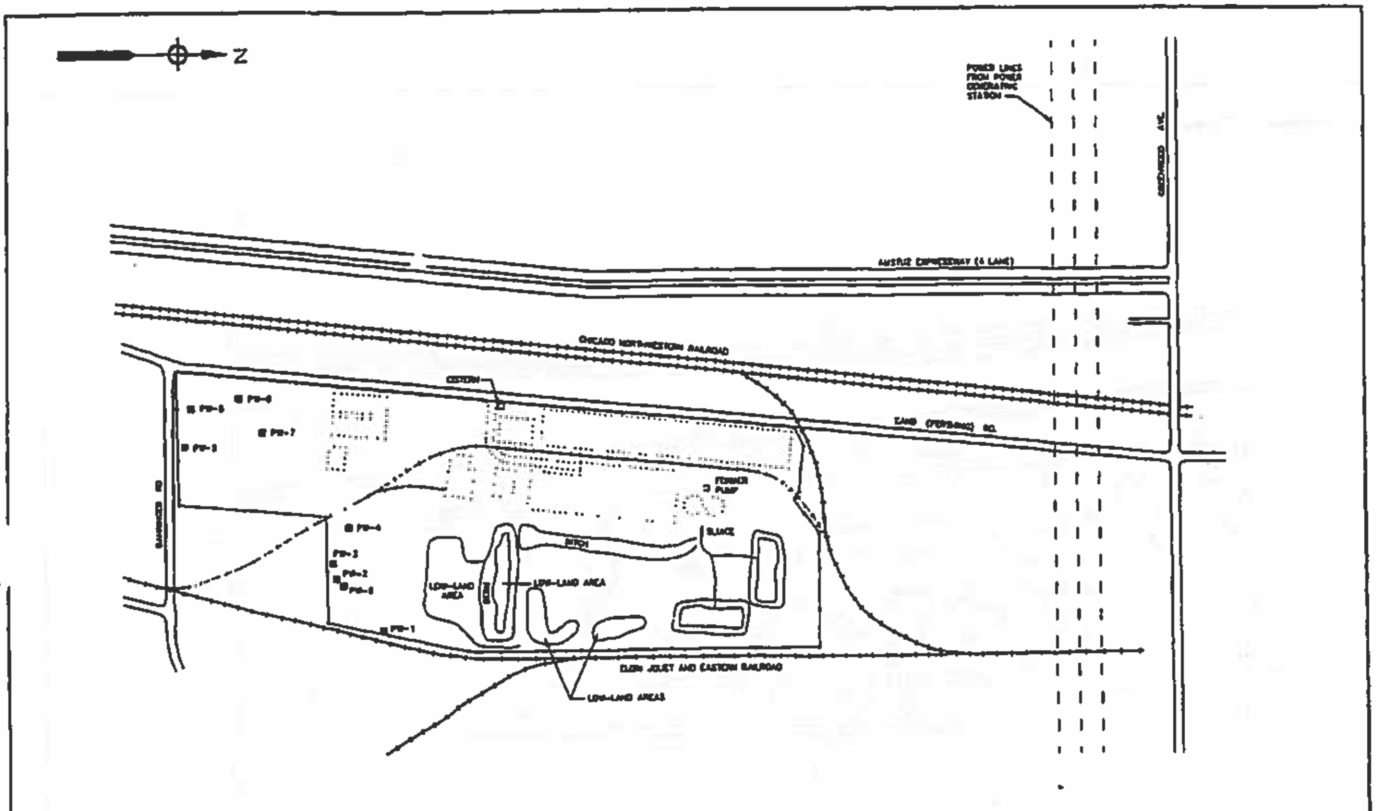
M&E METCALF & EDDY

APPROVED BY: Denise Seay DATE: 7/15/94

0 150 300 600
APPROXIMATE SCALE IN FEET

LEGEND
LOCATION OF FORMER BUILDINGS
SEDIMENT SAMPLING LOCATION

FIGURE 4–3
SEDIMENT SAMPLE (SS) LOCATION MAP
COMMONWEALTH EDISON COMPANY
FORMER GREISS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS



M&E METCALF & EDDY	DRAWN BY:	DATE:
	CHECKED BY:	DATE:
	APPROVED BY:	DATE:
	FILE NO.:	

0 150 300 600
APPROXIMATE SCALE IN FEET

LEGEND
LOCATION OF FORMER BUILDINGS
PRODUCTION WASTE SAMPLING LOCATION

FIGURE 4-4
PRODUCTION WASTE (PW) LOCATION MAP
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

MWG13-15_47152

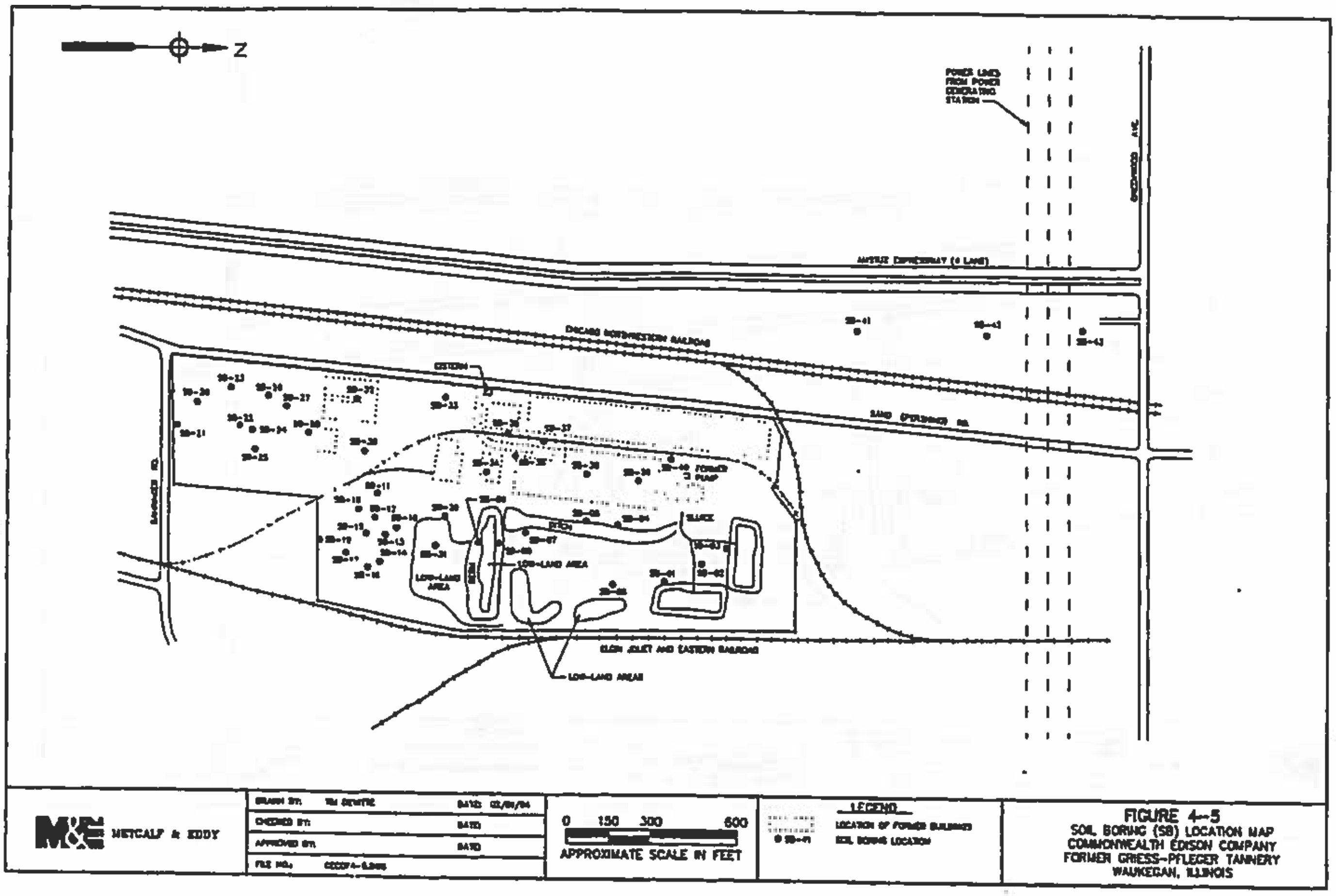
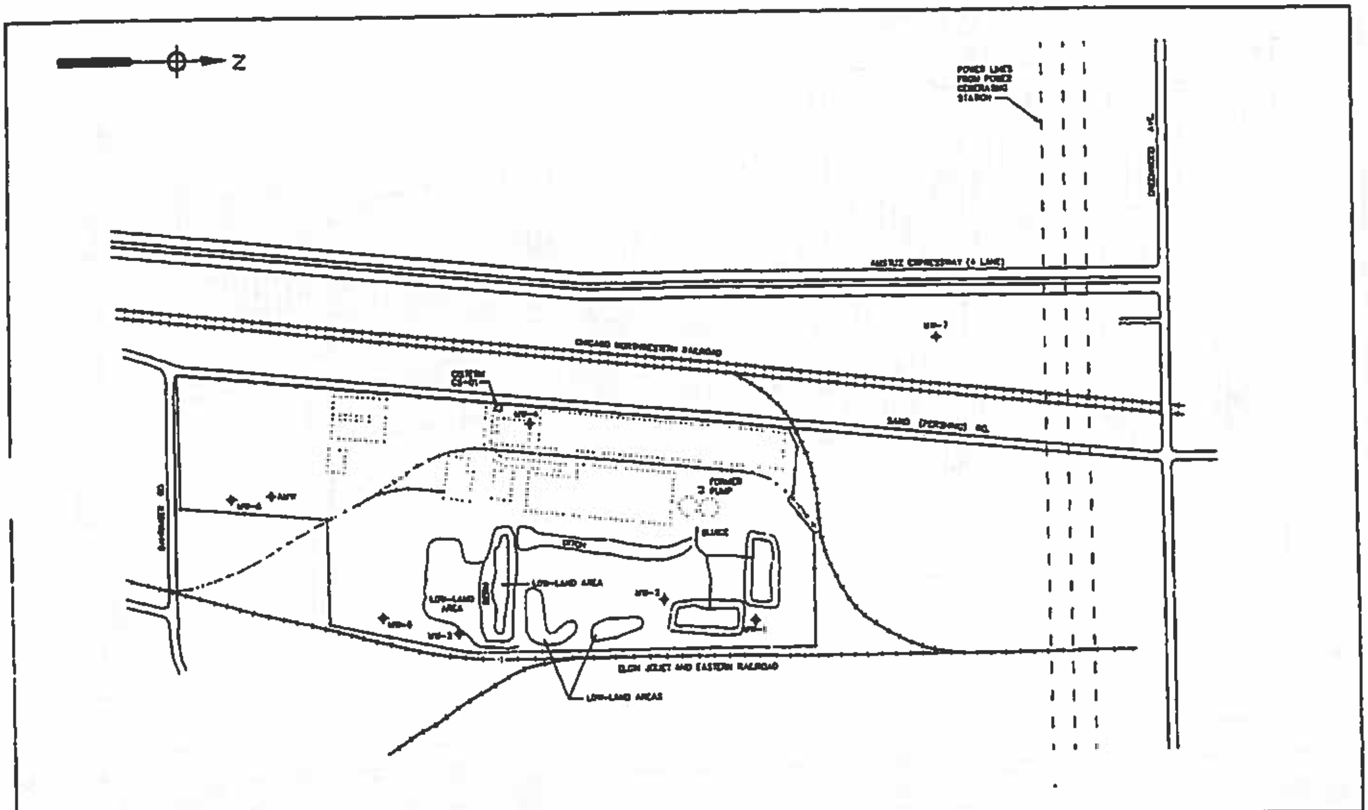


FIGURE 4-5
SOIL BORING (SB) LOCATION MAP
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

MWG13-15_47153



M&E METCALF & EDDY

DRAWN BY: TM DEWITRE	DATE: 07/09/94
CHECKED BY:	DATE:
APPROVED BY:	DATE:
FILE NO.:	

0 150 300 600
APPROXIMATE SCALE IN FEET

LEGEND
LOCATION OF FORMER BUILDINGS
MW-1 MONITORING WELL LOCATION
CS-01 CISTERN LOCATION
AMW ABANDONED MONITORING WELL LOCATION

FIGURE 4-6
MONITORING WELL, CISTERN, AND ABANDONED MONITORING WELL LOCATION MAP
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

MWG13-15_47154

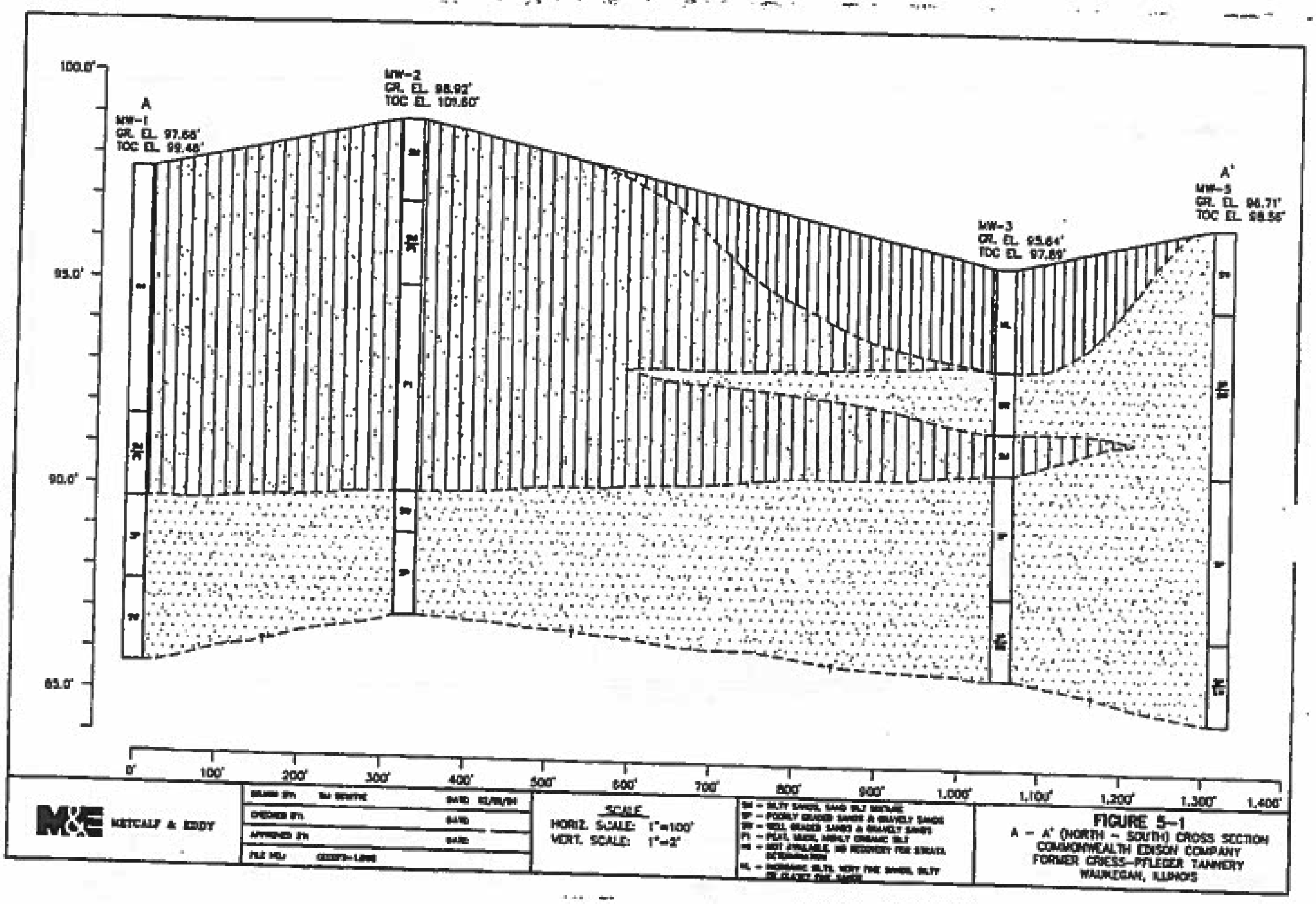
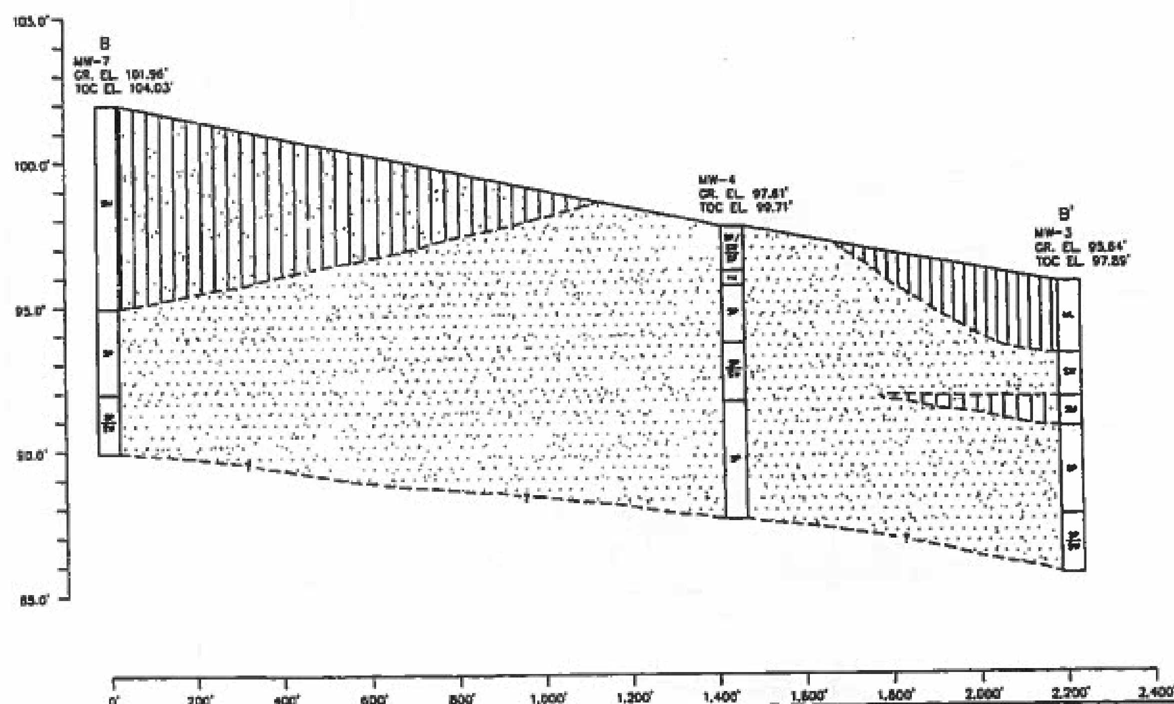


FIGURE 5-1
A - A' (NORTH - SOUTH) CROSS SECTION
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

MWG13-15_47155

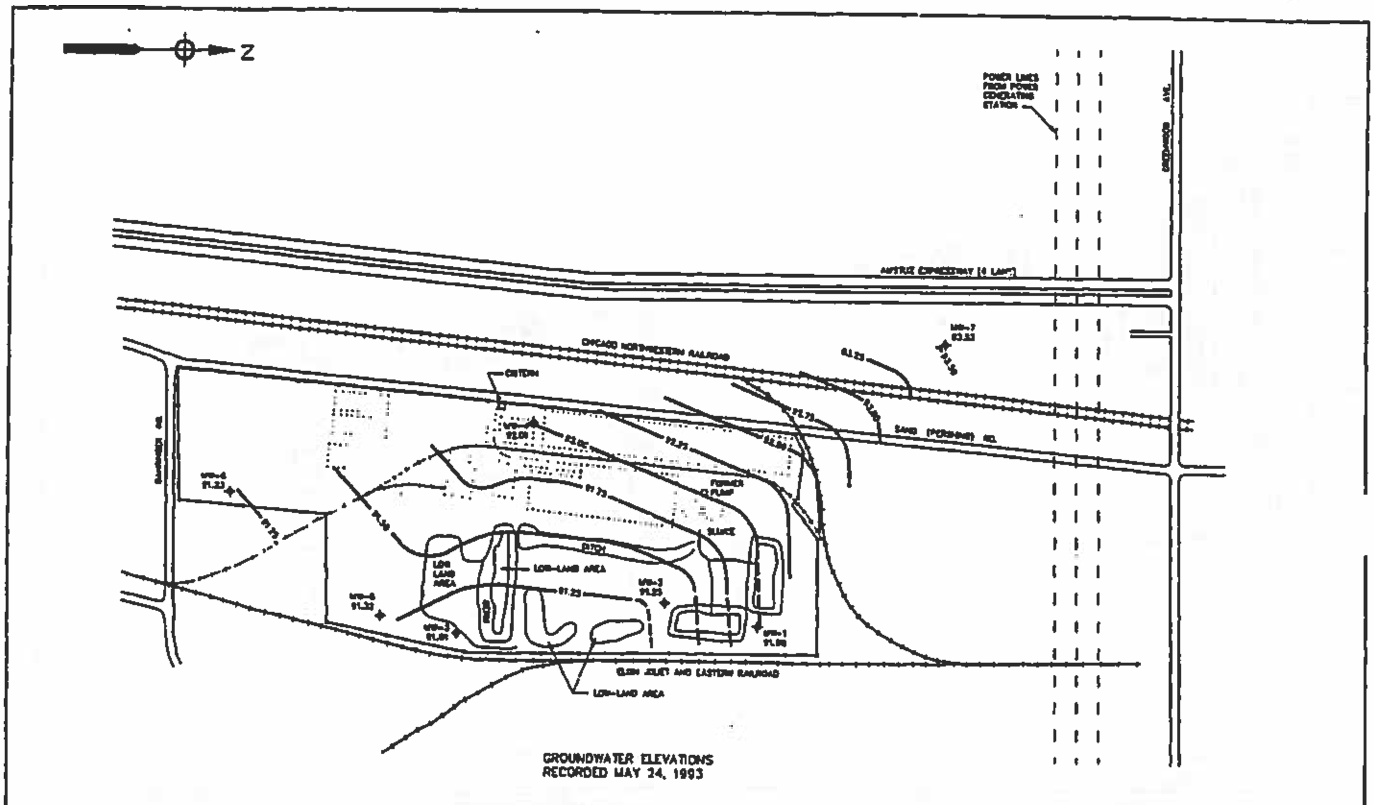


METCALF & EDDY

SCALE
HORIZ. SCALE: 1"=200'
VERT. SCALE: 1"=3'

FIGURE 5-2
B - B' (WEST - EAST) CROSS SECTION
COMMONWEALTH EDISON COMPANY
FORMER GRESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

MWG13-15_47156



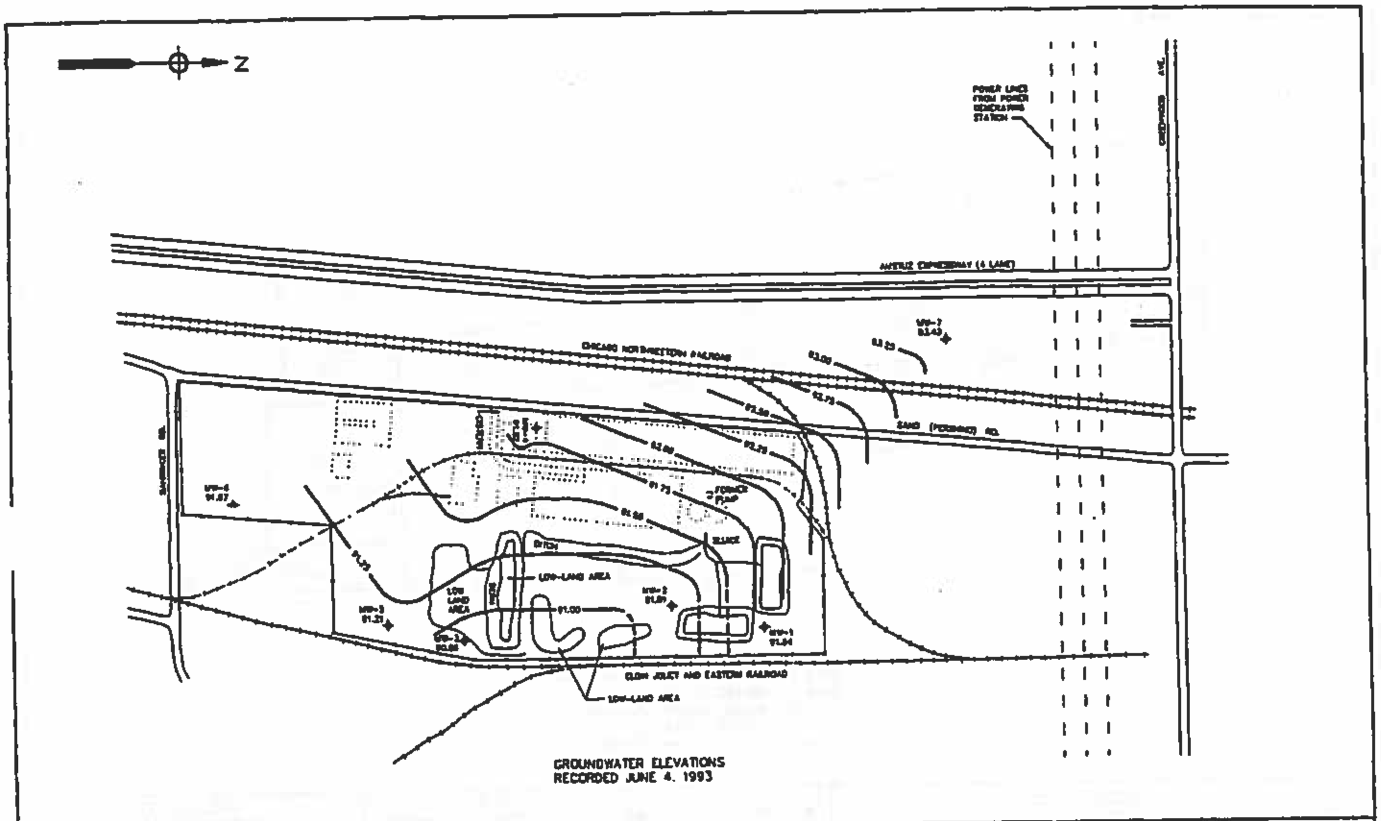
M&E METCALF & EDDY	DRAWN BY:	DATE:	
	CHECKED BY:	DATE:	
	APPROVED BY:	DATE:	
	FILE NO.:		

0 150 300 600
APPROXIMATE SCALE IN FEET

LEGEND
LOCATION OF FORMER BUILDINGS
MONITORING WELL LOCATION GROUNDWATER ELEVATION (FT.)
GROUNDWATER CONTOUR

FIGURE 5-3
GROUNDWATER CONTOUR MAP (MAY 24, 1993)
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

MWG13-15_47157



M&E METCALF & EDDY

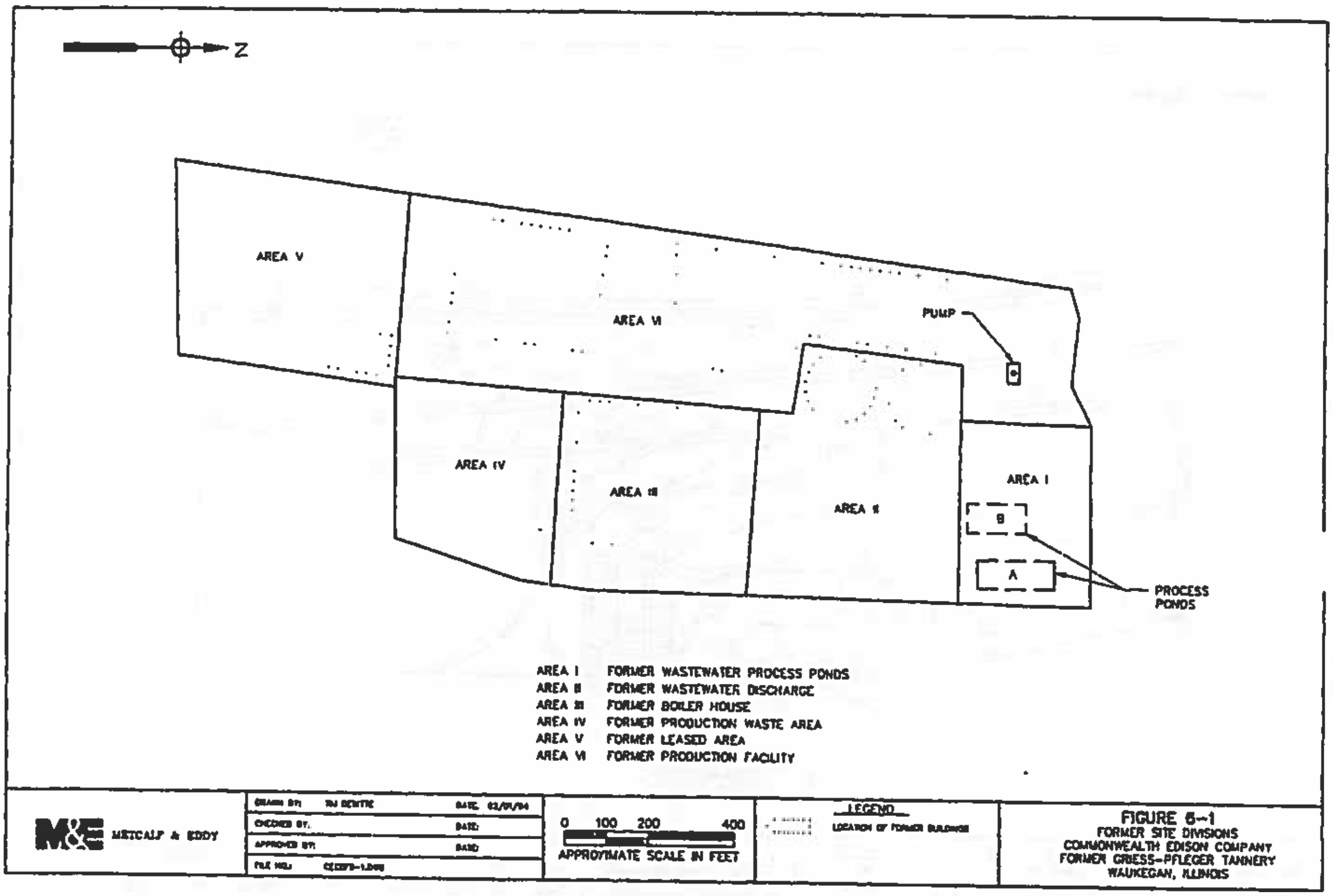
DRAWN BY: DATE: CHECKED BY: DATE: APPROVED BY: DATE: 2/5/94 FILE NO.:

0 150 300 600
APPROXIMATE SCALE IN FEET

LEGEND
LOCATION OF FORMER BUILDINGS
MONITORING WELL LOCATION GROUNDWATER ELEVATION (FT.)
GROUNDWATER CONTOUR

FIGURE 5-4
GROUNDWATER CONTOUR MAP (JUNE 4, 1993)
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

MWG13-15_47158



MWG13-15_47159

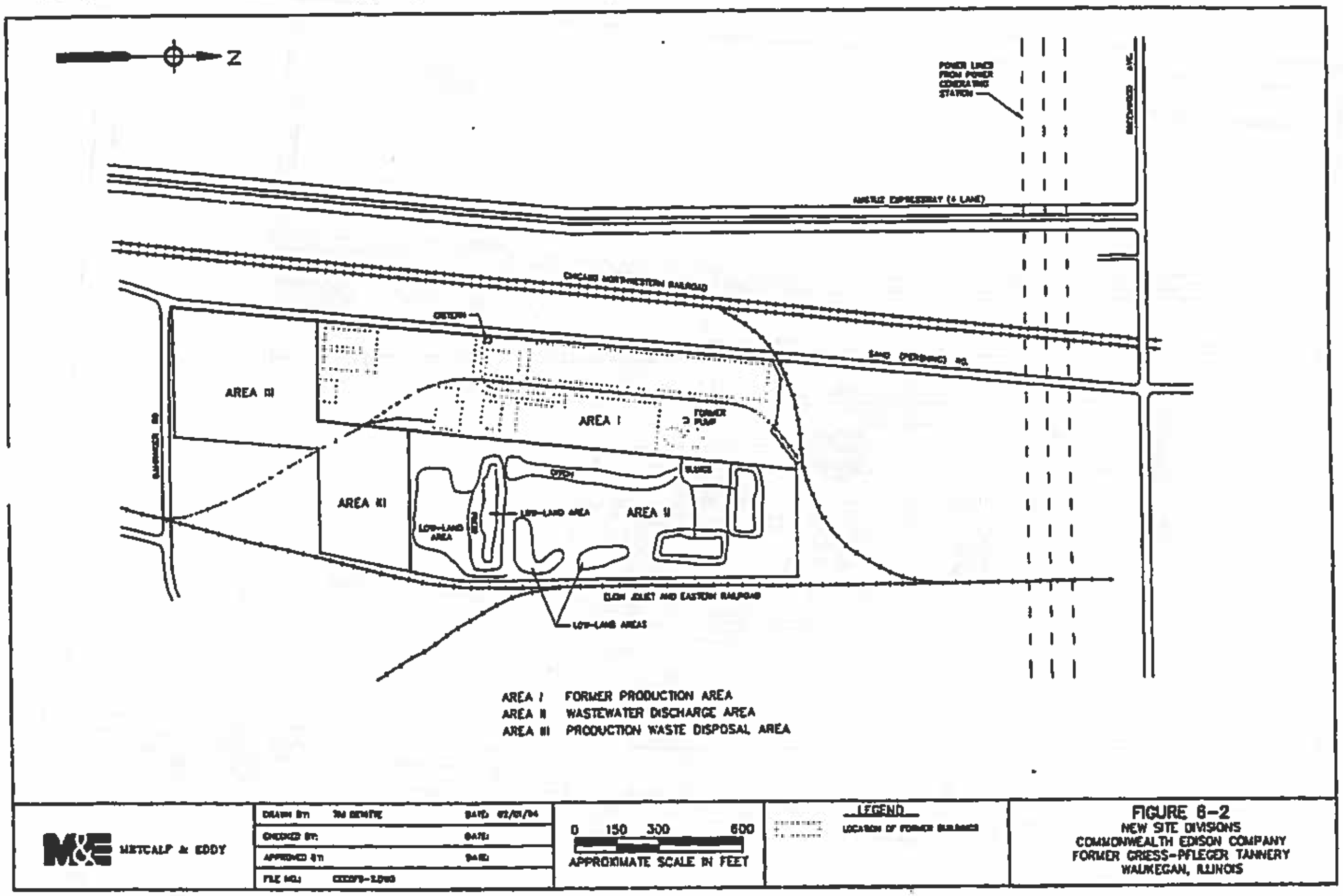
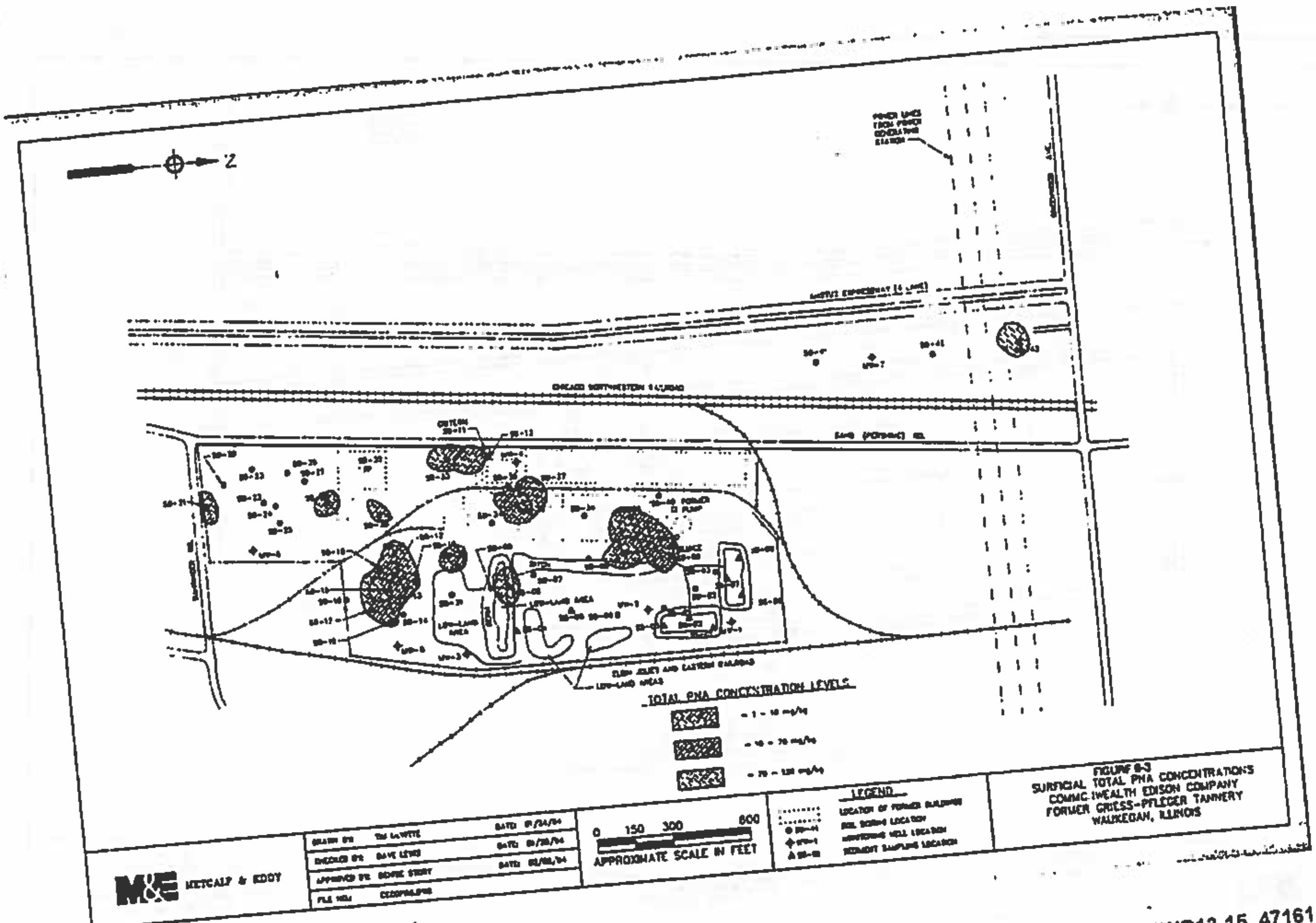
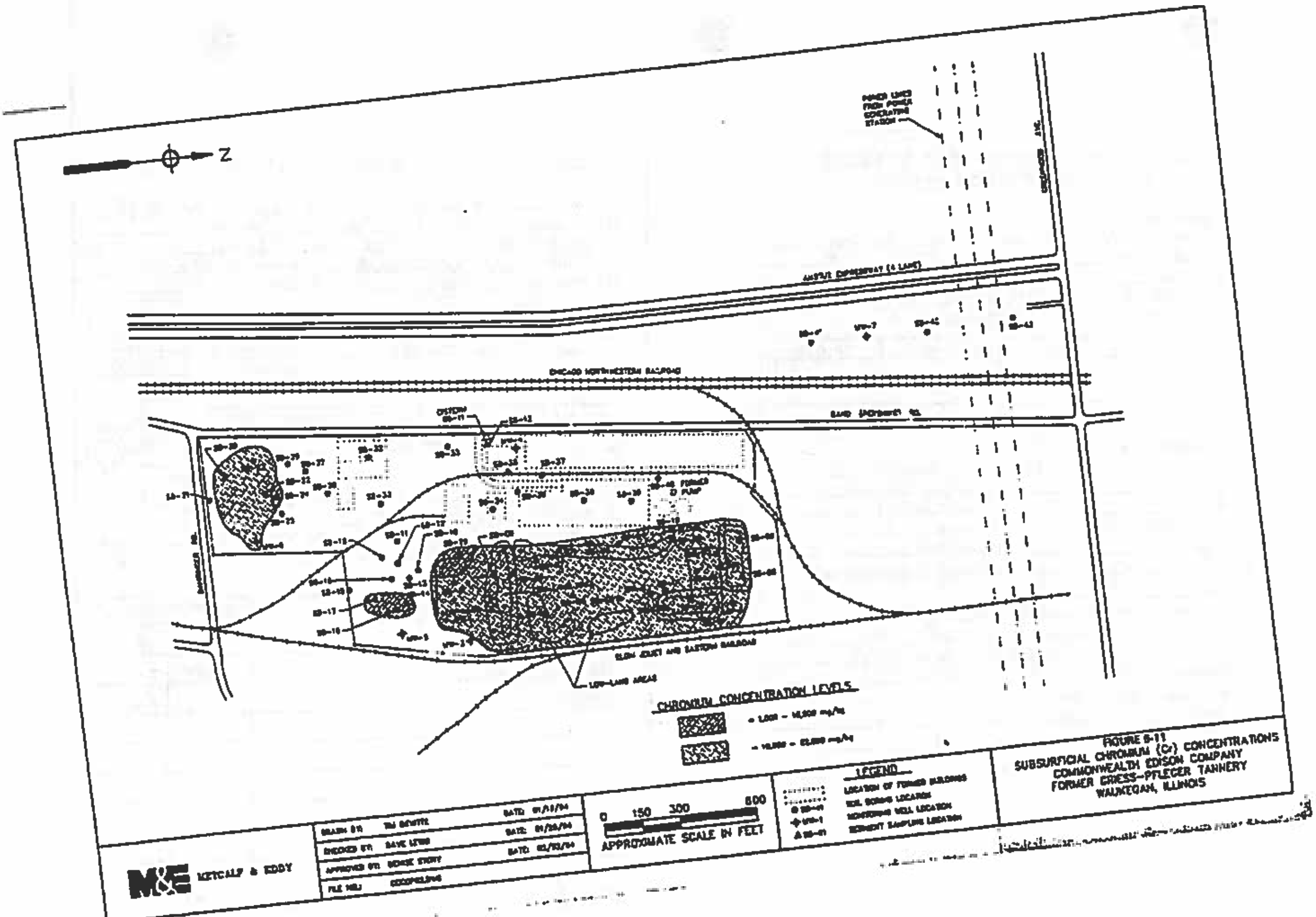


FIGURE 6-2
NEW SITE DIVISIONS
COMMONWEALTH EDISON COMPANY
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS



MWG13-15_47161



MWG13-15_47162

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug____. Bored____. Hole Diam.____in. Depth____ft.
      Curb material______. Buried Slab: Yes____No____
   b. Driven______. Drive Pipe Diam.____in. Depth____ft.
   c. Drilled 4____. Finished in Drift 96____. In Rock____.
      Tubular______. Gravel Packed______.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)

2. Distance to Nearest:
   Building 25____Ft. Seepage Tile Field 75____
   Cess Pool______ Sewer (non Cast Iron)______
   Privy______ Sewer (Cast Iron)______
   Septic Tank 50____ Barnyard______
   Leaching Pit______ Manure Pile______
3. Is water from this well to be used for human consumption?
   Yes ✓ No____
4. Date well completed 8-15-79
5. Permanent Pump Installed? Yes ✓ No____
   Manufacturer Red Jacket Type Sub
   Capacity 10 gpm. Depth of setting 90 ft.
6. Well Top Sealed? Yes____ No____
7. Pitless Adaptor Installed? Yes ✓ No____
8. Well Disinfected? Yes ✓ No____
9. Water Sample Submitted? Yes____ No ✓

REMARKS:

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

10. Dept. Mines and Minerals permit No. 39855 Year 1975
11. Property owner George Barube Well No.______
    Address 3437 Cheyenne Waukegan
    Driller Eugene Gross License No. 102-71
12. Water from Gravel (Formation) 13. County Lake
    at depth 90 to 96 ft. Sec. 16
14. Screen: Diam. 4 in. Twp. 45N
    Length: 3 ft. Slot 20 Rng. 12-E
    Elev.______
15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	Galv # 11		

SHOW LOCATION IN SECTION PLAT

16. Size Hole below casing: 4 in.
17. Static level 65 ft. below casing top which is 1 ft. above ground level. Pumping level 80 ft. when pumping at 10 gpm for 2 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
To Brown Clay	10	10
Blue Clay	80	90
Gravel	6	96
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED Eugene Gross DATE 11-26-79

MWG13-15_47163

White Copy — Ill. Dept. of Public Health
Yellow Copy — Well Contractor
Blue Copy — Well Owner

INSTRUCTIONS TO DRILLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug ____. Bored ____. Hole Diam. 5 In. Depth 88 ft.
   Curb material ____. Buried Slab: Yes ____ No ____
   b. Driven ____. Drive Pipe Diam. ____ In. Depth ____ ft.
   c. Drilled X. Finished in Drift X. In Rock ____.
   Tubular ____. Gravel Packed ____.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)

2. Distance to Nearest:
   Building ____ Ft. Seepage Tile Field ____
   Cess Pool ____ Sewer (non Cast Iron) ____
   Privy ____ Sewer (Cast Iron) ____
   Septic Tank ____ Barnyard ____
   Leaching Pit ____ Manure Pile ____
3. Well furnishes water for human consumption? Yes X No ____
4. Date well completed 11/4/80
5. Permanent Pump Installed? Yes X Date 11/7/80 No ____
   Manufacturer Red Jacket Type Subm. Location ____
   Capacity 10 gpm. Depth of Setting 60 Ft.
6. Well Top Sealed? Yes X No ____ Type ____
7. Pitless Adapter Installed? Yes X No ____
   Manufacturer Williams Model Number ____
   How attached to casing? clamp
8. Well Disinfected? Yes X No ____
9. Pump and Equipment Disinfected? Yes X No ____
10. Pressure Tank Size 42 gal. Type Well-X-Trol
    Location ____
11. Water Sample Submitted? Yes X No ____

REMARKS:

IDPH 4.065
1/74 — KNB-1

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner ROBERT LEHMAN Well No. Keith Ave.
    Address 1418 Talmadge, Zion, IL.
    Driller GEORGE E. GAFFKE License No. 102-234
11. Permit No. 97145 Date 11/3/80
12. Water from Sand-Gravel (Formation) 13. County Lake
    at depth 85 to 88 ft. Sec. 16 1/4
14. Screen: Diam. 5 In. Twp. 45N
    Length: 3 ft. Slot 10 Rge. 12E
    Elev. ____
15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	2' abv. grd.	88

SHOW LOCATION IN SECTION PLAT: 75' W 50' E 3/4 NW NW NE

16. Size Hole below casing: 5 In.
17. Static level 55 ft. below casing top which is 2 ft. above ground level. Pumping level ____ ft. when pumping at 8-10 gpm for ____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown Clay	10	10
Blue Clay	75	85
Sand-Gravel	3	88

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED George E. Gaffke DATE 1/19/81

MWG13-15_47164

White — Ill. Dept. Public Health
Yellow Copy — Well Contractor
Blue Copy — Well Owner

INSTRUCTIONS TO DRILLER:
FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, ROOM STATE OFFICE BUILDING, SPRINGFIELD, ILLINOIS, 62706. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug____. Bored____. Hole Diam. 5 in. Depth 245 ft.
   Curb material____. Buried Slab: Yes____ No____
   b. Driven ✓. Drive Pipe Diam. 5 in. Depth 245 ft.
   c. Drilled ✓. Finished in Drift ✓. In Rock____
   Tubular____. Gravel Packed____
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)

2. Distance to Nearest:
   Building 22 Ft. Seepage Tile Field____
   Cess Pool____ Sewer (non Cast Iron)____
   Privy____ Sewer (Cast Iron)____
   Septic Tank____ Barnyard____
   Leaching Pit____ Manure Pile____
3. Is water from this well to be used for human consumption? Yes ✓ No____
4. Date well completed June 1972
5. Permanent Pump Installed? Yes ✓ No____
   Manufacturer Webco Type____
   Capacity 10 gpm. Depth of setting [illegible] ft.
6. Well Top Sealed? Yes ✓ No____
7. Pitless Adaptor Installed? Yes ✓ No____
8. Well Disinfected? Yes ✓ No____
9. Water Sample Submitted? Yes____ No____

REMARKS:

IDPH 4.065
10/68

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Terry Meinert Well No.____
    Address 714 Oak - Waukegan
    Driller [illegible] License No. 50
11. Permit No. NE 15090 Date 6/9/72
12. Water from gravel (Formation) at depth 240 to 245 ft.
13. County Lake
    Sec. 16
    Twp. 45N
    Rge. [illegible]
    Elev.____
14. Screen: Diam. — in. Length:____ft. Slot____

SHOW LOCATION IN SECTION PLAT
300'N 450'W SE/c SW

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	galv. T+C 14.81 ppf	0	245

16. Size Hole below casing: 5 in.
17. Static level 80 ft. below casing top which is 1 ft. above ground level. Pumping level 80 ft. when pumping at 20 gpm for____ hours.

18.

FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Black dirt	3	3
Yellow clay	19	22
Blue clay	136	158
Sandy clay	67	225
Blue clay	15	240
gravel	5	245

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 6/23/72

MWG13-15_47165

White Copy - Ill. Dept. Public Health
Yellow - Well Contractor
Blue Copy - Well Owner

INSTRUCTIONS [illegible] DRILLERS

FILL IN ALL PERTINENT INFORMATION [illegible]ESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug____. Bored____. Hole Diam. 5 in. Depth 218 ft.
   Curb material____. Buried Slab: Yes____ No____
   b. Driven____. Drive Pipe Diam.____in. Depth____ft.
   c. Drilled X . Finished in Drift____. In Rock X
   Tubular____. Gravel Packed____.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)

2. Distance to Nearest:
   Building____Ft. Seepage Tile Field____
   Cess Pool____ Sewer (non Cast Iron)____
   Privy____ Sewer (Cast Iron)____
   Septic Tank____ Barnyard____
   Leaching Pit____ Manure Pile____
3. Well furnishes water for human consumption? Yes X No____
4. Date well completed 6/29/77
5. Permanent Pump Installed? Yes X Date____ No____
   Manufacturer Red Jacket Type Subm. Location____
   Capacity 10 gpm. Depth of Setting 160 Ft.
6. Well Top Sealed? Yes X No____ Type____
7. Pitless Adapter Installed? Yes X No____
   Manufacturer Williams Model Number____
   How attached to casing? clamp
8. Well Disinfected? Yes X No____
9. Pump and Equipment Disinfected? Yes X No____
10. Pressure Tank Size 42 gal. Type Well-X-Trol
    Location____
11. Water Sample Submitted? Yes X No____

REMARKS:

IDPH 4.065
3/74 - XHB-1

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner SANCHEZ CONST. CO. Well No. 3003 Birch
    Address 3500 Woodlawn, Gurnee, Il.
    Driller HENRY BOYSEN CO. License No. 102-6
11. Permit No. 58959 Date 4/14/77
12. Water from Limestone (Formation) at depth 209 to 218 ft.
13. County Lake
    Sec. 9/10 Twp. 45N Rge. 12E Elev.____
14. Screen: Diam.____in. Length:____ft. Slot____
15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	grade	197
5	Galv.	197	202

SHOW LOCATION IN SECTION PLAT
300'S, 50'W [illegible] SW 1/4 SE

16. Size Hole below casing: 5 in.
17. Static level 121 ft. below casing top which is 1 ft. above ground level. Pumping level____ft. when pumping at 8-10 gpm for____hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown Clay	12	12
Blue Clay	87	99
Gravel	2	101
Blue Clay	57	158
Blue Clay-Gravel	51	209
Limestone	9	218

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 12/21/77

MWG13-15_47166

White ... Ill. D... of Public Health
Yellow Copy – Well Contractor
Blue Copy – Well Owner

INSTRUCTIO... DRILLERS

FILL IN ALL PERTINENT INFORMATION ...UESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

2 1/

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug ____. Bored ____. Hole Diam. 5 in. Depth 158 ft.
      Curb material ____. Buried Slab: Yes ____ No ____
   b. Driven ____. Drive Pipe Diam. ____ in. Depth ____ ft.
   c. Drilled X. Finished in Drift ____. In Rock X.
      Tubular ____. Gravel Packed ____.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)

2. Distance to Nearest:
   Building ____ Ft. Seepage Tile Field ____
   Cess Pool ____ Sewer (non Cast Iron) ____
   Privy ____ Sewer (Cast Iron) ____
   Septic Tank ____ Barnyard ____
   Leaching Pit ____ Manure Pile ____
3. Well furnishes water for human consumption? Yes X No ____
4. Date well completed 9/30/77
5. Permanent Pump Installed? Yes X Date 10/12/77 No ____
   Manufacturer Red Jacket Type subm. Location ____
   Capacity 10 gpm. Depth of Setting 100 Ft.
6. Well Top Sealed? Yes X No ____ Type ____
7. Pitless Adapter Installed? Yes X No ____
   Manufacturer Williams Model Number ____
   How attached to casing? clamp
8. Well Disinfected? Yes X No ____
9. Pump and Equipment Disinfected? Yes X No ____
10. Pressure Tank Size 42 gal. Type Well-X-Trol
    Location ____
11. Water Sample Submitted? Yes X No ____

REMARKS:

IDPH 4.065
1/74 – XNB-1

GEOLOGICAL AND WATER SURVEYS WELL RECORD

4404

10. Property owner BUSCH & LARSON Well No. $$$$ Linden
    Address 1015 Shiloh Blvd., Zion, IL.
    Driller HENRY BOYSEN CO. License No. 102-6
11. Permit No. 66536 Date 9/9/77
12. Water from Limestone (Formation) 13. County Lake
    at depth 155 to 158 ft.
14. Screen: Diam. ____ in. Sec. 9-8e
    Length: ____ ft. Slot ____ Twp. 45N
    Rge. 12E
    Elev. ____
15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	grade	129
5	Black Steel	129	150

SHOW LOCATION IN SECTION PLAT

2751'S, 1151'E, NW/c, Sec shown

16. Size Hole below casing: 5 in.
17. Static level 75 ft. below casing top which is 1 ft. above ground level. Pumping level ____ ft. when pumping at 20+ gpm for ____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown Clay	5	5
Blue Clay	23	28
Gravel	6	34
Blue Clay - Gravel	58	92
Sand - Gravel	2	94
Blue Clay - Gravel	55	149
Limestone	4	153
Shale	2	155
Limestone	3	158

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 1/20/78

MWG13-15_47167

White Copy — Dept. of Public Health
Yellow Copy — Well Contractor
Blue Copy — Well Owner

INSTRUCTIONS TO DRILLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug____ Bored____ Hole Diam. 5 in. Depth 97 ft.
      Curb material____ Buried Slab: Yes____ No____
   b. Driven____ Drive Pipe Diam.____ in. Depth____ ft.
   c. Drilled X Finished in Drift X In Rock____
      Tubular____ Gravel Packed____
   d. Grout:

(KIND)	FROM (FT.)	TO (FT.)

2. Distance to Nearest:
   Building____ Ft. Seepage Tile Field____
   Cess Pool____ Sewer (non Cast Iron)____
   Privy____ Sewer (Cast Iron)____
   Septic Tank____ Barnyard____
   Leaching Pit____ Manure Pile____
3. Well furnishes water for human consumption? Yes X No____
4. Date well completed 9/27/77
5. Permanent Pump Installed? Yes X Date 9/29/77 No____
   Manufacturer Red Jacket Type Subm. Location____
   Capacity 10 gpm. Depth of Setting 60 Ft.
6. Well Top Sealed? Yes X No____ Type____
7. Pitless Adapter Installed? Yes X No____
   Manufacturer Baker Snappy Model Number____
   How attached to casing? clamp
8. Well Disinfected? Yes X No____
9. Pump and Equipment Disinfected? Yes X No____
10. Pressure Tank Size 42 gal. Type Well-X-Trol
    Location____
11. Water Sample Submitted? Yes X No____

REMARKS:

IDPH 4.065
1/74 — KNB-1

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner BUSCH & LARSON Well No. 4412 Linden
    Address 1015 Shiloh Dr., Zion, IL.
    Driller HENRY BOYSEN CO. License No. 102-6
11. Permit No. 66537 Date 9/9/77
12. Water from Sand-Gravel (Formation) 13. County Lake
    at depth 86 to 97 ft. Sec. 9
14. Screen: Diam. 5 in. Twp. 45N
    Length: 3 ft. Slot 10 Rge. 12E
    Elev.____
15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	grade	95

SHOW LOCATION IN SECTION PLAT
175 W, 150 S, SE 1/4, S... SW ...

16. Size Hole below casing: 5 in.
17. Static level 48 ft. below casing top which is 1 ft. above ground level. Pumping level____ ft. when pumping at 20 gpm for____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown	12	12
Blue Clay	4	16
Gravel	2	18
Blue Clay	31	49
Gravel	2	51
Blue Clay	29	80
Blue Clay - Gravel	6	86
Sand - Gravel	11	97

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 1/19/78

MWG13-15_47168

INSTRUCTIONS TO DRILLERS

Pink — Dept. of Public Health
Yellow — Well Contractor
Blue C — Well Owner

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62... DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug____. Bored____. Hole Diam. 5 in. Depth 95 ft.
   Curb material____. Buried Slab: Yes____ No____
   b. Driven____. Drive Pipe Diam.____in. Depth____ft.
   c. Drilled X. Finished in Drift X. In Rock____
   Tubular____. Gravel Packed____
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)

2. Distance to Nearest:
   Building____ Ft. Seepage Tile Field____
   Cess Pool____ Sewer (non Cast Iron)____
   Privy____ Sewer (Cast Iron)____
   Septic Tank____ Barnyard____
   Leaching Pit____ Manure Pile____
3. Well furnishes water for human consumption? Yes X No____
4. Date well completed 6/8/79
5. Permanent Pump Installed? Yes X Date 6/15/79 No____
   Manufacturer Red Jacket Type subm. Location____
   Capacity 10 gpm. Depth of Setting 80 Ft.
6. Well Top Sealed? Yes X No____ Type____
7. Pitless Adapter Installed? Yes X No____
   Manufacturer Williams Model Number____
   How attached to casing? clamp
8. Well Disinfected? Yes X No____
9. Pump and Equipment Disinfected? Yes X No____
10. Pressure Tank Size 42 gal. Type Well-X-Trol
    Location____
11. Water Sample Submitted? Yes X No____

REMARKS:

IDPH 4.082
5/74 — ENB-1

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner BUSCH & LARSON Well No. 38644 N Linden
    Address 1015 Shiloh Blvd., Zion, IL
    Driller GEORGE E. GAFFKE License No. 102-234
11. Permit No. 85336 Date 5/8/79
12. Water from Gravel (Formation) at depth 92 to 95 ft.
13. County Lake
    Sec. 9 Twp. 45N Rge. 12E Elev.____
14. Screen: Diam. 5 in. Length: 3 ft. Slot 10
15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	grade	93

SHOW LOCATION IN SECTION PLAT

16. Size Hole below casing: 5 in.
17. Static level 43 ft. below casing top which is 1 ft. above ground level. Pumping level____ ft. when pumping at 8-10 gpm for____ hours.

18.

FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown Clay	10	10
Blue Clay	35	45
Sand	6	51
Blue Clay	41	92
Gravel	3	95

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 11/16/79

MWG13-15_47169

Illinois State Water Survey

WATER RESOURCES BUILDING • 605 E. SPRINGFIELD, CHAMPAIGN • MAIL: BOX 232, URBANA, ILLINOIS 61801 • AREA CODE 217 PHONE 333-2210

WILLIAM C. ACKERMANN, Chief

Northern Regional Office
P. O. Box 409
Warrenville, IL 60555
August 15, 1978

Mr. William G. Rosing
Rosing and Carlson, Ltd.
33 North County Street, Suite 400
Waukegan, IL 60085

Dear Mr. Rosing:

I am writing in response to your request for suggestions on developing a well supply for sprinkling purposes at the Glen Flora Country Club.

After I received your letter I talked with John Huemann regarding the test wells drilled for the Club. Based on that conversation and the copy of the records you sent me, I would suggest you drill a 10- or 12-inch well at Site No. 5. Drilling should penetrate the entire thickness of the dolomite rock in order to take advantage of all the potential water-yielding crevices. It would be reasonable to consider the possibility of treating the well with 1000 to 2000 gallons of dilute hydrochloric acid after construction is completed. Such treatment is for the purposes of removing fine material from existing crevices so that what water is present can move into the well bore more readily.

Very truly yours,
STATE WATER SURVEY DIVISION

Robert T. Sasman
Hydrologist

MWG13-15_47170

ROSING AND CARLSON, LTD.
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
33 NORTH COUNTY STREET, SUITE 400
WAUKEGAN, ILLINOIS 60085
TELEPHONE 312-662-4321

WILLIAM G. ROSING
RAYMOND M. CARLSON
JAMES T. MAGEE
STEPHEN G. APPLEHANS

387 CEDAR LAKE ROAD
ROUND LAKE, ILLINOIS 60073
TELEPHONE 312-546-4322

August 10, 1978

Mr. Robert Sassmon
Illinois Department of Water
Survey
P.O. Box 409
Warrenville, Illinois 60555

Re: Glen Flora Country Club

Dear Mr. Sassmon:

As you may recall, we talked prior to you going on your vacation in June, concerning a water problem at Glen Flora Country Club in Waukegan, Illinois. The Club currently has two 25 foot wells serving the course plus a supply of city water. We had Mr. Hiemon of Johnsburg drill two test wells with the idea of placing a new well on the course. One test well was near our fifth hole and the other near the eleventh. Enclosed are the results of the two test wells. The Club would appreciate any assistance that you could give to us in our endeavor to place a well on our property with some minimum assurance of a reasonable water source.

Thanking you for your assistance.

Very truly yours,

WGR

William G. Rosing

WGR/nab

Enclosure

11 WELL

0 → 195' INTERMITTENT , ' LAYERS OF SANDY FORMATION, BUT MAINLY CLAY

145 → 153' DIRTY LIMESTONE ; LOOSE ROCK WITH GRAVEL

153' → 264' LIMESTONE VAIN

190' → 200' MAIN WATER SUPPLY

70' STATIC WATER SUPPLY

90 G.P.M. AT PRESENT

440 V. 3-PHASE – IDEAL ELECTRICAL SOURCE

#5 WELL

TOP → 8' CLAY

8' → 25' GRAVEL

25' → 70' SANDY CLAY

70' → 155' CLAY

155 → 200' LIMESTONE

APPROXIMATELY 50 G.P.M. 6" WEL

150 G.P.M. MINIMUM

STATIC WATER LEVEL 80'

155 → 200 FEET - MAIN WATER SU

SWS

#10

7

City Waukegan County Lake

Section 15.9E Twp. No. 45 Range 12E

Location (in feet from section corner) 1900'S, 700'E, NW cor.

Owner GREISS-PFLEGER TANNERY Authority R.J. Gordon, Supt.

Contractor S.B. Geiger Address

Date drilled 1929 Elev. above sea level top of well 585

Depth 1670'

Log 0'-112' to limestone 890' to St. Peter 1150 Dresbach
1540' Mt. Simon

Were drill cuttings saved NO Where filed —

Size hole If reduced, where and how much

Casing record 550' of 15" 110' of 20"

Distance to water when not pumping 79 Distance to water is 172'

feet after pumping at 750 G. P. M. for hours

Reference point for above measurements Pump base

Type of pump B. J. turbine Distance to cylinder 180' x 10"

Length of cylinder 7 stage Length of suction pipe below cylinder

Length ~~stroke~~ airline None Speed

Hours used per day Type of power Electric Motor

Rating of motor 125 HP Rating of pump in G. P. M.

Can following be measured: (1) Static water level No

(2) Pumping level No (3) Discharge Yes 117,278,000 gal 1958

(4) Influence on other wells No

Temperature of water Was water sample collected No

Date Dec 24, 1958 Effect of water on meters, hot water coils, etc.

Date of Analysis Analysis No.

Recorder Robert T. Bergman

8607-22817 12

Date March 9, 1959

P188399

MWG13-15_47174

SENT BY:ENVIRONMENTAL HEALTH ; 9- 8-93 ; 4:51PM ; LAKE COUNTY HEALTH → 17087751158;# 1

WATER WELL APPLICATION/PERMIT

Lake County Health Department
Division of Environmental Health

3010 Grand Avenue, Waukegan, IL 60085, (708) 360-6740
121 E. Grand Avenue, Lake Villa, IL 60046, (708) 356-6222
118 S. Main Street, Wauconda, IL 60084, (708) 526-1125

FOR OFFICE USE ONLY
ISO #
WW # 93-16-0591
Fee Paid $57.00
Approved by [signature]
Date 8/11/93

PERMIT FEES ( ) Construct or Deepen $100.00 (X) Abandonment Only $50.00

APPLICATION FOR PERMIT TO CONSTRUCT, DEEPEN OR ABANDON A WATER WELL

1. Well Owner-Current Mailing Address
Commonwealth Edison
Peter B. McCauley
Name
One First National Plaza, 10 S. Dearborn
Address
Chicago IL 60190
City State Zip
Telephone No. (312- 394-4470

2. Contractor Lic. # 102-003-001
Exploration Technology Steven VanderGalien Jr
Name
4512 Burke Road
Address
Madison WI 53715
City State Zip
Telephone No. (608)-273-8028

3. Location-County Lake City Waukegan
Street Northeast Corner of Sand & Dahringer Township Name Waukegan
Lot # Subdivision Name
Section 15 Township 45 (N) Range 12 (E)
Quarter of the Quarter of the Quarter
PERMANENT INDEX NO. (PIN) 08 - 15 - 100 - 005

Show Location in Section Plat

4. Propose to abandon a potable water well to be used as:
(construct, deepen, repair or abandon)
A. ( ) Private Water Well (Serves a owner occupied residence)
B. ( ) Semi-Private Water Well (Serves less than 25 people) - Business, Apartment, etc.
C. ( ) Non-Community Public Water Well (Serves more than 25 non-resident people)
D. (X) Non-Potable Water Well. Please Specify Environmental Groundwater Monitoring Well

5. Is there another well on property? Potential exists that another groundwater monitoring well of unknown construction is on-site.
If there is an existing well on site, will it be used ( ); abandoned (X); or brought up to code ( ) and by what date? August 1993
Is public water supply available? No If yes, distance to public supply
Is this well to supply more than one residence or building?

6. Water Well Information
Diameter 2" Ft./In.
Anticipated Depth (Ft.) Unknown

7. Type of Well (Circle One)
Driven Drilled
Bored Other
(Describe)

RECEIVED AUG 04 1993 ENVIRONMENTAL HEALTH DIVISION

COMPLETE IF ITEM 4B or 4C IS CHECKED
Number of Persons Served — Gallons of Storage — Pump Capacity (GPM)
Type of Facility Served — (i.e. restaurant, factory, school etc.)

8. Permit approval/denial is based on information provided. Any changes in well location or other information provided without specific approval by this office may result in permit revocation.

7-6-93 [signature]
Date (Applicant) Signature of Owner or Contractor

RECEIVED JUL 12 1993 ENVIRONMENTAL HEALTH DIVISION

If there is no accompanying septic system plot plan for this property, please provide the following on the back of the form or a separate sketch (if possible use a Plat of Survey):

(1) Lot lines and dimensions
(2) House or building location
(3) Location of all septic tanks, septic fields or sewers (include surrounding properties)
(4) Location of proposed and existing wells
(5) Distances from all wells to items 1 - 4 and any other sources of contamination

SEP 8 '93 17:00 7082494972 PAGE.001

MWG13-15_47175

WATER WELL SEALING FORM

Lake County Health Department
Division of Environmental Health

3010 Grand Avenue
Waukegan, IL 60085
(708) 360-6740

121 E. Grand Avenue
Lake Villa, IL 60046
(708) 356-6222

118 S. Main Street
Wauconda, IL 60084
(708) 526-1125

This form shall be submitted to the Lake County Health Department at the time of the sealing potable wells, boring or monitoring wells. Such wells are to be sealed not more than 30 days after they are abandoned in accordance with the sealing requirements in the Water Well Construction Code.

1. Owner of Property: Commonwealth Edison (Name) — One First National Plaza, 10 S. Dearborn, Chicago, IL (Address) — 60690 (Zip)

2. Well Location: Northeast corner of Sand & Dahringer Rd. (Street) — Waukegan (City) — Lake (County)

General Description: Section 15, Township 45N, Range 12E P.I.N#: 08 - 15 - 100 - 005

4. Drilling Permit No. (and date, if known) Unknown

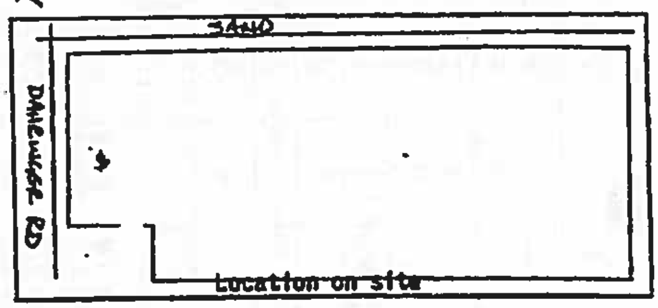
5. Type of Well: Drilled X Driven ___ Dug ___ Other ___

6. Total Depth 14' Static Level N/A Diameter (inches) 2.0"

7. Formation clear of obstruction? Yes X No ___ Depth to Obstruction ___

8. DETAILS OF PLUGGING:

From 14 To 0 feet
Kind of Plug NEAT CEMENT GROUT
From ___ To ___ feet
Kind of plug ___
From ___ To ___ feet
Kind of plug ___
From ___ To ___ feet



9. CASING RECORD

Upper 3 feet of casing removed? Yes X No ___ ENTIRE WELL WAS REMOVED

If well casing consists of brick, stone, concrete blocks, porous tile, or other porous material, casing was removed to a depth of 10 feet below the surface. Yes ___ No ___

10. Date well was Sealed: 10 (Month) 05 (Day) 93 (Year)

11. Licensed water well driller or other person approved by the Department performing well sealing:

Exploration Technology Kevin D. Zoromsi (Name (PRINT)) — [signature] (SIGNATURE)

2642Rimrock Road (Address) — Madison (City) — WI (State) — 53715 (Zip)

102-003-001 (License Number)

SEALING OF WELL OBSERVED BY ___ (signature), Lake County Health Department Division of Environmental Health

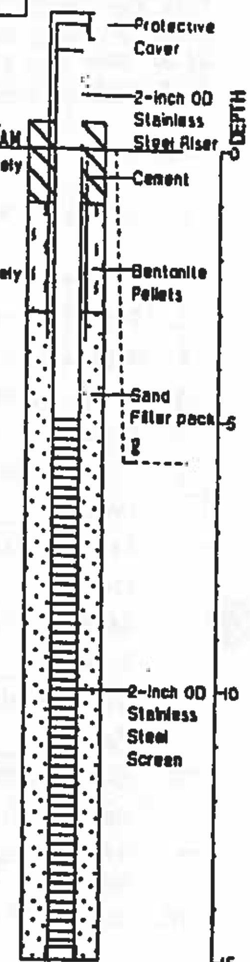
MWG13-15_47176

CLIENT	Commonwealth Edison
SITE	Former Griess-Pfleger Tannery
LOCATION	Waukegan, Illinois
WELL NUMBER	MW-1
MGE GEOLOGIST	Scott Irving
DRILLING CO.	D & G

DATE DRILLED	05/18/93
WEATHER	Cloudy, 50 F
DRILLING METHOD	Hollow Stem Auger
SAMPLING METHOD	Continuous, split spoons
ELEVATION	93.46
MGE JOB NUMBER	010487

DEPTH	DENSITY	MOISTURE	SORTING	PLASTICITY	SAMPLE NUMBER	BLOW COUNT	% RECOVERY	PID READING (ppm)	USCS CLASS	DESCRIPTION
0	v	M	M	NA	SS-1	1, 1	18	<1.0		Very dark gray-brown, 10YR 3/2, moist, loose, moderately sorted silty sand, trace organics and animal hair from tannery, soft, flaky texture (4"R).
	v	M	M	NA	SS-2	1, 1	13	<1.0	na	Very dark gray-brown, 10YR 3/2, moist, loose, moderately sorted silty sand, little clay, trace organics and hair, very soft (3"R).
5	v	M	M	NA	SS-3	1, 1, 1, 1	13	<1.0		Very dark brown, 10YR 2/2, moist, loose, moderately sorted silty sand, trace organics, very soft (3"R).
	v	M/W	M	NA	SS-4	1, 1	100	<1.0	SM/Pt	Dark gray-brown to black, 10 YR 4/2 to 10YR 2/1, moist to wet, very loose, moderately sorted silty sand, with peat and much hair from tannery (24"R).
	v	W	W	NA	SS-5	1, 1, 2	100	<1.0	SP	Black, 10YR 2/1, wet, very loose, poorly sorted silty sand with tannery hair and peat and more fine to medium sand in lower 12 inches (24"R).
10	m	W	W	NA	SS-6	2, 9, 11, 13	100	<1.0	SW	Black, 10YR 2/1, wet, medium density, well sorted fine to medium sand, trace silt, little coarse and trace fine, subangular gravels (10"R). Light brown-gray, 10YR 8/2, wet, medium density, well sorted fine to medium sand, little coarse sand, trace fine subrounded gravels and intermittent thin laminae of coarse sand and fine gravels (14"R). (24" total R)
15										
20										

WELL DIAGRAM



E.O.B. (feet)= 15

MOISTURE

W=Wet
M=Moist
D=Damp
d=Dry

SORTING

P=Poorly
M=Moderate
W=Well

DENSITY

s=Soft
M=Medium
S=Stiff
VS=Very stiff
H=Hard

v=Very loose
L=Loose
m=Medium
D=Dense
VD=Very dense

PLASTICITY

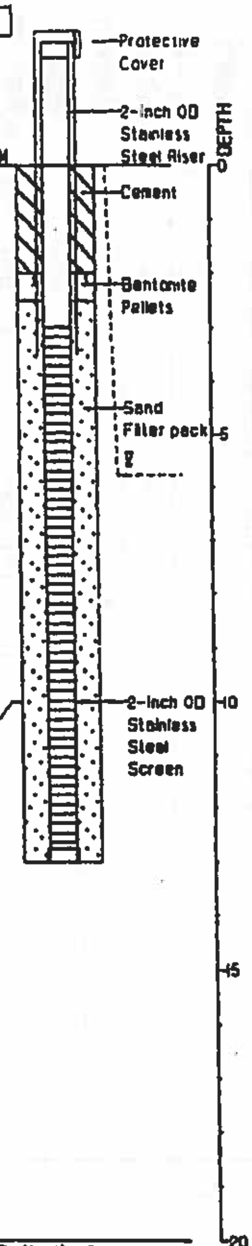
NA=Not applicable
NP=Nonplastic
L=Low plasticity
M=Medium plasticity
H=High plasticity

MWG13-15_47177

CLIENT Commonwealth Edison	DATE DRILLED 05/18/93
SITE Former Griess-Pflager Tannery	WEATHER Cloudy, 50 F
LOCATION Waukegan, Illinois	DRILLING METHOD Hollow Stem Auger
WELL NUMBER MW-2	SAMPLING METHOD continuous, split spoons
M&E GEOLOGIST Scott [illegible]	ELEVATION [illegible]
DRILLING CO. D & G	M&E JOB NUMBER 010487

DEPTH	DENSITY	MOISTURE	SORTING	PLASTICITY	SAMPLE NUMBER	BLOW COUNT	% RECOVERY	PID READING (ppmv)	USCS	DESCRIPTION
0	v	M	M	NA	SS-1	2, 1, 1, 1	17	<1.0	SM	Dark brown, 10YR 3/3, moist, very loose, moderately sorted silty sand, peat-like texture (4"R).
	v	M	M	NA	SS-2	1, 1	12	<1.0	SM/Pt	Dark brown, 10YR 3/3, moist, very loose, moderately sorted silty sand, trace organics, peat-like, spongy texture (<3"R).
5	na	M	na	NA	SS-3		42	<1.0	Pt	Brown, 10YR 4/3, moist, peat/hair, some sand and silt. *No blow count–Split spoon was pushed in easily.*
	na	M/W	na	NA	SS-4		67	<1.0	Pt	Very dark brown, 10YR 2/2, moist to wet, animal hair from tannery, peat-like texture, some sand and silt. *No blow count–Split spoon was pushed in easily.*
	v	W	W	NA	SS-5	1, 2, 2, 3	75	<1.0	Pt/SW	Black with red tint, 10YR 2/1, wet, very loose, animal hair, some sand (6"R). Gray, 10YR 5/1, wet, very loose, well graded fine sand, some medium sand, little coarse sand, trace organics, trace fine, subangular gravels (12"R). (18"R total)
10	m	W	P	NA	SS-6	6, 7, 8, 12	100	<1.0	SP	Gray, 10YR 5/1, wet, medium density, poorly graded fine sand, some medium sand, little coarse sand, little silt, trace organics (24"R).
15										
20										

WELL DIAGRAM



E.O.B. (feet)= 13

MOISTURE
W=Wet
M=Moist
D=Damp
d=Dry

SORTING
P=Poorly
M=Moderate
W=Well

DENSITY
s=Soft
M=Medium
S=Stiff
VS=Very stiff
H=Hard
v=Very loose
L=Loose
m=Medium
D=Dense
VD=Very dense

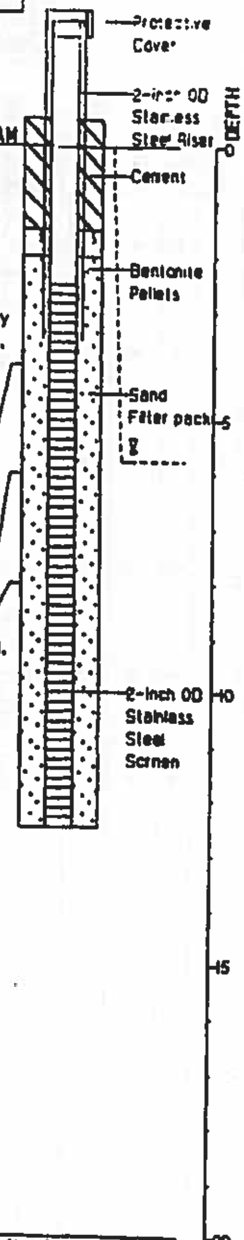
PLASTICITY
NA=Not applicable
NP=Nonplastic
L=Low plasticity
M=Medium plasticity
H=High plasticity

CLIENT	Commonwealth Edison
SITE	Former Griess-Pflager Tannery
LOCATION	Waukegan, Illinois
WELL NUMBER	MW-3
M&E GEOLOGIST	Scott Irving
DRILLING CO.	Fishe Enterprises, Inc.

DATE DRILLED	05/13/93
WEATHER	Clear, sunny, 56 F
DRILLING METHOD	Hollow Stem Auger
SAMPLING METHOD	continuous, split spoons
ELEVATION	97.53
M&E JOB NUMBER	010487

DEPTH	DENSITY	MOISTURE	SORTING	PLASTICITY	SAMPLE NUMBER	BLOW COUNT	% RECOVERY	PID READING (ppm)	USCS CLASS	DESCRIPTION
0	v	M	M	NP/L	SS-1	2, 2, 1, 1	54	<1.0	ML	Very dark gray, 2.5Y 3/1, moist, very loose, moderately sorted, non-plastic to low plasticity clayey silt, trace to little fine to coarse sand, trace organics (13"R).
	v	M/W	W	L/NA	SS-2	2, 2, 2, 4	83	<1.0	SW	Very dark gray, 2.5Y 3/1, moist, very loose, moderately sorted, low plasticity clayey silt, trace to little fine fine to coarse sand, trace organics (4"R). Dark to very dark gray-brown, 2.5Y 4/2 to 2.5Y 3/2, wet, very loose, well graded fine and medium sand, trace silt, trace coarse and fine subangular to angular gravels (11"R). (15"R total)
5	v	W	P	NA	SS-3	1, 1, 3, 1	33	<1.0	SM / SP	Black, 2.5Y 2.5/1, wet, very loose, poorly graded fine sandy silt to silty fine sand, trace organics, trace to little coarse sand (4"R). Very dark gray, 2.5Y 3/1, wet, very loose, poorly graded, fine sand, trace medium sand (4"R). (8"R total)
	L	W	P	NA	SS-4	2, 2, 4, 6	96	<1.0	SP	Gray, 2.5Y 6/1, wet, loose, poorly graded, fine sand with medium sand, trace coarse sand (23"R).
	m	W	P/W	NA	SS-5	5, 5, 7, 9	100	<1.0	SP SW	Gray, 2.5Y 6/1, wet, medium density, poorly to well graded fine sand, some medium sand, trace coarse sand, trace fine, subrounded gravels (24"R).
10										
15										
20										

WELL DIAGRAM



E.O.B. (feet)= 12.5

MOISTURE

W=Wet
M=Moist
D=Damp
d=Dry

SORTING

P=Poorly
M=Moderate
W=Well

DENSITY

s=Soft
M=Medium
S=Stiff
VS=Very stiff
H=Hard

v=Very loose
L=Loose
m=Medium
D=Dense
VD=Very dense

PLASTICITY

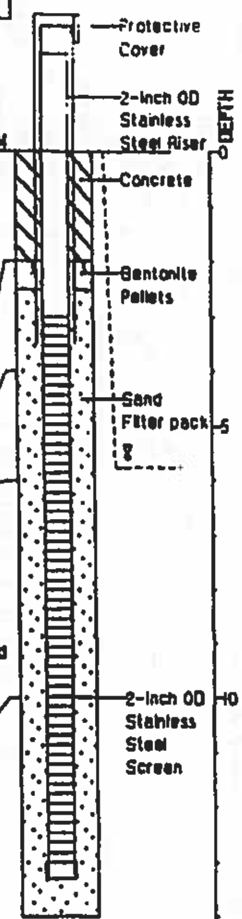
NA=Not applicable
NP=Nonplastic
L=Low plasticity
M=Medium plasticity
H=High plasticity

CLIENT	Commonwealth Edison
SITE	Former Griess-Pfilager Tannery
LOCATION	Waukegan, Illinois
WELL NUMBER	MW-4
WSE GEOLOGIST	Scott Irving
DRILLING CO.	Fishe Enterprises, Inc.

DATE DRILLED	05/11/93
WEATHER	Sunny, clear, 56 F
DRILLING METHOD	Hollow Stem Auger
SAMPLING METHOD	continuous, split spoons
ELEVATION	99.71
WSE JOB NUMBER	010487

DEPTH	DENSITY	MOISTURE	SORTING	PLASTICITY	SAMPLE NUMBER	BLOW COUNT	% RECOVERY	PID READING (ppmv)	USCS CLASS	DESCRIPTION
0	L	M	P/W	NA	SS-1	4, 3, 5, 5	58	21.0	SP/SW, SP, na	Gravel fill (8"R). Light gray, 2.5Y 7/2, moist, loose, poorly graded to well graded fine sand, little medium sand, trace fine, angular gravels (2"R). Light olive-brown, iron stains present in upper inch, moist, loose, poorly graded fine sand, trace medium sand and laminae of very fine and fine sand (4"R). Black, 2.5Y 5/1, asphalt (2"R). (14"R total)
	m	M/W	P	NA	SS-2	5, 5, 5, 5	63	<1.0	SP	Light olive-brown, 2.5Y 5/3, moist to wet, medium density, poorly graded fine and medium sands, trace fine, subrounded gravels (15"R).
5	v	W	P/W	NA	SS-3	2, 2, 2, 2	50	<1.0	SP/SW	Pale yellow, 2.5Y 7/3, wet, very loose, poorly to well graded medium sand, some fine sand, trace fine subrounded to subangular gravels (12"R).
	m	W	P	NA	SS-4	5, 7, 9, 12	100	<1.0	SP	Gray, 2.5Y 5/1, wet, medium density, very poorly graded fine to very fine sand, trace medium and coarse sand, trace coal/peat material (24"R).
	m/D	W	P	NA	SS-5	5, 7, 12, 13	98	<1.0	SP	Gray, 2.5Y 5/1, wet, medium to dense, poorly graded fine sand, some medium sand, trace to little coarse sand and intermittent lenses and laminae of coarse sand also present. Trace fine, rounded gravels and coal/peat material (23"R).
10										Heaving sand present. *No sample collected.*
15										
20										

WELL DIAGRAM



E.O.B. (feet) = 14

MOISTURE

W=Wet
M=Moist
D=Damp
d=Dry

SORTING

P=Poorly
M=Moderate
W=Well

DENSITY

s=Soft
M=Medium
S=Stiff
VS=Very stiff
H=Hard

v=Very loose
L=Loose
m=Medium
D=Dense
VD=Very dense

PLASTICITY

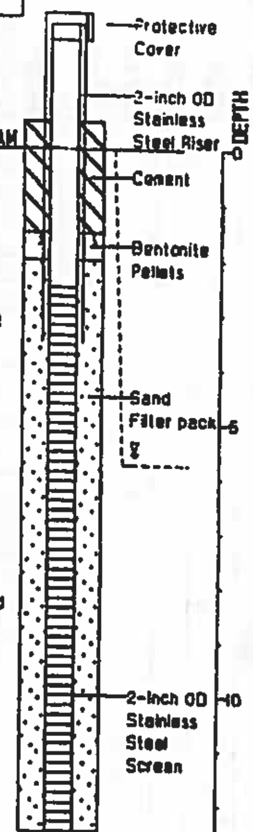
NA=Not applicable
NP=Nonplastic
L=Low plasticity
M=Medium plasticity
H=High plasticity

CLIENT	Commonwealth Edison
SITE	Former Griess-Pfleger Tannery
LOCATION	Waukegan, Illinois
WELL NUMBER	MW-5
MSE GEOLOGIST	Scott Irving
DRILLING CO.	Fisne Enterprises, Inc.

DATE DRILLED	05/12/93
WEATHER	Clear, sunny, 50 F
DRILLING METHOD	Hollow Stem Auger
SAMPLING METHOD	Continuous, split spoons
ELEVATION	33.56
MSE JOB NUMBER	010487

DEPTH	DENSITY	MOISTURE	SORTING	PLASTICITY	SAMPLE NUMBER	BLOW COUNT	% RECOVERY	PID READING (ppm)	USCS CLASS	DESCRIPTION
0	v	M	W	NA	SS-1	1, 1, 1, 2	38	<1.0	SW	Black, 2.5Y 2.5/1, slight iron staining in lower inch, moist, very loose, well graded fine and medium sand, little coarse sand, trace to little fine, angular slag and gravels, trace silt (9"R).
	L	W	W/P	NA	SS-2	1, 2, 4, 5	42	<1.0	SP/SW	Very dark gray to light olive-brown, 2.5Y 3/1 to 2.5Y 5/3, wet, loose, well to poorly graded fine sand, little medium and coarse sand, trace coarse gravel, trace silt (10"R).
5	L	W	P/W	NA	SS-3	1, 2, 5, 5	33	<1.0		Light olive-brown, 2.5YR 5/4, wet, loose, poorly to well graded fine sand, little medium and coarse sand, trace fine, subrounded to angular gravels (8"R).
	L	W	P	NA	SS-4	2, 3, 4, 5	67	<1.0	SP	Dark gray, 2.5Y 4/1, wet, loose, poorly graded fine to very fine sand, trace medium sand, trace to little silt, trace organic material (16"R).
	m	W	P	NA	SS-5	3, 5, 7, 8	100	<1.0		Dark gray, 2.5Y 4/4, wet, medium density, poorly graded fine to very fine sand, trace silt, trace fine, subrounded gravels (24"R).
10	m	W	P	NA	SS-6	3, 5, 8, 8	100	<1.0	SP/SW	Dark gray, 2.5Y 4/1, wet, medium density, poorly graded fine to very fine sand, little medium sand, little fine subrounded gravels, trace silt (24"R).
15										
20										

WELL DIAGRAM



E.O.B. (feet)= 12.5

MOISTURE
W=Wet
M=Moist
D=Damp
d=Dry

SORTING
P=Poorly
M=Moderate
W=Well

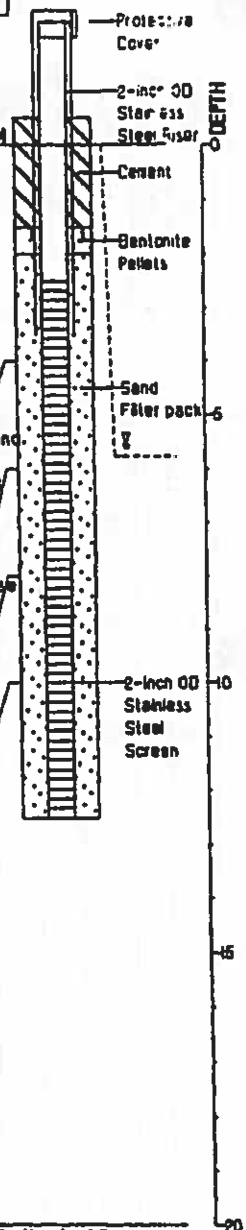
DENSITY
s=Soft
M=Medium
S=Stiff
VS=Very stiff
H=Hard
v=Very loose
L=Loose
m=Medium
D=Dense
VD=Very dense

PLASTICITY
NA=Not applicable
NP=Nonplastic
L=Low plasticity
M=Medium plasticity
H=High plasticity

CLIENT Commonwealth Edison	DATE DRILLED 05/11/93
SITE Former Griess-Pflager Tannery	WEATHER Clear, sunny, 56 F
LOCATION Waukegan, Illinois	DRILLING METHOD Hollow Stem Auger
WELL NUMBER MW-6	SAMPLING METHOD continuous, split spoons
MGE GEOLOGIST Scott Irving	ELEVATION 98.44
DRILLING CO. Fishe Enterprises, Inc	MGE JOB NUMBER 010487

DEPTH	DENSITY	MOISTURE	SORTING	PLASTICITY	SAMPLE NUMBER	BLOW COUNT	% RECOVERY	PID READING (ppmv)	USCS CLASS	DESCRIPTION
0	m/L	M	P	NA	SS-1	3, 4, 5, 6	42	<1.0	Pt	Very dark gray-brown to olive-brown, 2.5Y 3/2 to 2.5Y 4/4, moist, medium density, poorly graded, peat and decaying organics, roots, wood (10"R).
	v	M/W	P	NA	SS-2	1, 2, 1, 1	46	<1.0	Pt	Light olive-brown to black, 2.5Y 5/3 to 2.5Y 2.5/1, moist to wet, very loose, poorly graded organic matter, roots, decaying plants, wood, hair, and peat. Trace gravels, little sand and silt, spongy texture, increase in the angular gravels and tannery hair with depth (11"R).
5	v	W	P	NA	SS-3	1, 2, 1, 1	42	<1.0	SP	Very dark gray, 2.5Y 3/1, wet, very loose, poorly graded organic matter and peat, trace gravels, some sand (3"R). Gray-brown, 2.5Y 5/2, wet, very loose, very poorly graded very fine to fine sand, trace medium sand (7"R). (10"R total)
	m	W	P/W	NA	SS-4	4, 7, 8, 13	83	<1.0	SP SW	Light yellow-brown, 2.5Y 6/3, wet, medium density, poorly to well graded very fine and fine sand, little medium sand, trace fine subrounded gravels, trace coarse sand, trace root material (20"R).
	L	W	P/W	NA	SS-5	1, 5, 3, 7	87	<1.0		Light yellow-brown, 2.5Y 6/4, wet, loose, poorly to well graded, fine sand, little medium sand, trace coarse sand, trace fine subrounded gravels, intermittent lenses of coarse sand in upper 10 inches (21"R).
10	L	W	P	NA	SS-6	2, 2, 4, 5	100	<1.0	SP	Light yellow-brown, 2.5Y 6/3, wet, loose, poorly graded fine sand with medium sand, trace coarse sand (24"R).
15										
20										

WELL DIAGRAM



E.O.B. (feet)= 12.5

MOISTURE
W=Wet
M=Moist
D=Damp
d=Dry

SORTING
P=Poorly
M=Moderate
W=Well

DENSITY
s=Soft
M=Medium
S=Stiff
VS=Very stiff
H=Hard
v=Very loose
L=Loose
m=Medium
D=Dense
VD=Very dense

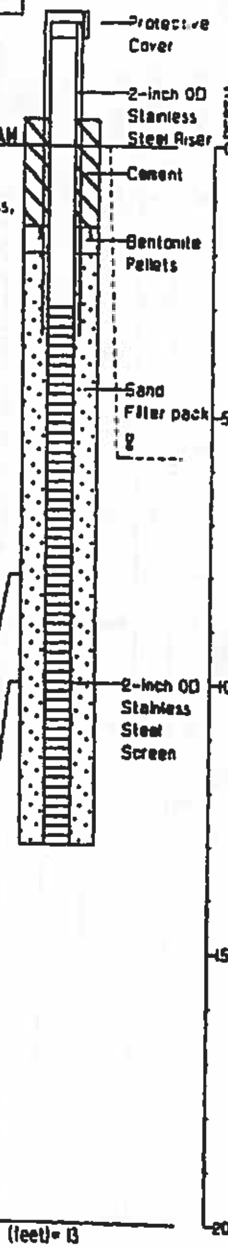
PLASTICITY
NA=Not applicable
NP=Nonplastic
L=Low plasticity
M=Medium plasticity
H=High plasticity

MWG13-15_47182

CLIENT	Commonwealth Edison
SITE	Former Griess-Pfleger Tannery
LOCATION	Waukegan, Illinois
WELL NUMBER	MW-7
M&E GEOLOGIST	Scott Irving
DRILLING CO.	Fishe Enterprises, Inc.

DATE DRILLED	05/12/93
WEATHER	Clear, sunny, 50 F
DRILLING METHOD	Hollow Stem Auger
SAMPLING METHOD	continuous, split spoons
ELEVATION	[illegible]
M&E JOB NUMBER	010487

DEPTH	DENSITY	MOISTURE	SORTING	PLASTICITY	SAMPLE NUMBER	BLOW COUNT	% RECOVERY	PID READING (ppm)	USCS CLASS	DESCRIPTION
0	L	M	P	NA	SS-1	1, 2, 3, 4	98	<1.0	SM	Dark gray, 2.5Y 4/1, moist, loose, poorly graded silty fine to very fine sand or sandy silt, trace medium and coarse sand, trace organics, some debris (rubber, glass, and plastic) in upper portion of sample (23"R).
	L	W	P	NA	SS-2	2, 3, 2, 4	83	<1.0	SM	Dark gray, 2.5Y 4/1, wet, loose, poorly graded fine to very fine sandy silt, trace medium and coarse sand (20"R).
5	L	W	P	NA	SS-3	2, 2, 4, 5	88	<1.0	SM	Dark gray, 2.5Y 4/1, wet, loose, poorly graded fine to very fine sandy silt, trace medium and coarse sand, trace coal throughout (21"R).
	L/m	W	P	NA	SS-4	2, 5, 7, 8	83	<1.0	SM / SP	Dark gray, 2.5Y 4/1, wet, loose, poorly graded fine to very fine sandy silt, trace medium sand, trace organics (7"R). Olive-yellow, 2.5Y 6/6, wet, medium density, poorly graded silty sand and weathered gravel (2"R). Dark gray, 2.5Y 4/1, wet, medium density, poorly graded fine to very fine sand, some medium sand (11"R). (20"R total)
	m	W	P	NA	SS-5	2, 7, 9, 11	83	<1.0	SP	Dark gray, 2.5Y 4/1, wet, medium density, poorly graded fine to very fine sand, some medium sand (2"R). Gray, 2.5Y 5/1, wet, medium density, poorly graded fine sand, some medium sand, little coarse sand, trace silt, trace fine angular gravels, slight stratification of sands in lower 8 inches of sample (18"R). (20"R total)
10	L/m	W	P/W	NA	SS-6	2, 5, 8, 11	79	<1.0	SP / SW	Gray, 2.5Y 5/1, wet, loose to medium density, poorly to well graded fine to very fine sand, trace medium and coarse sand, trace silt, lens of silty sand located six inches from top of sample (19"R).
15										
20										



E.O.B. (feet)= 13

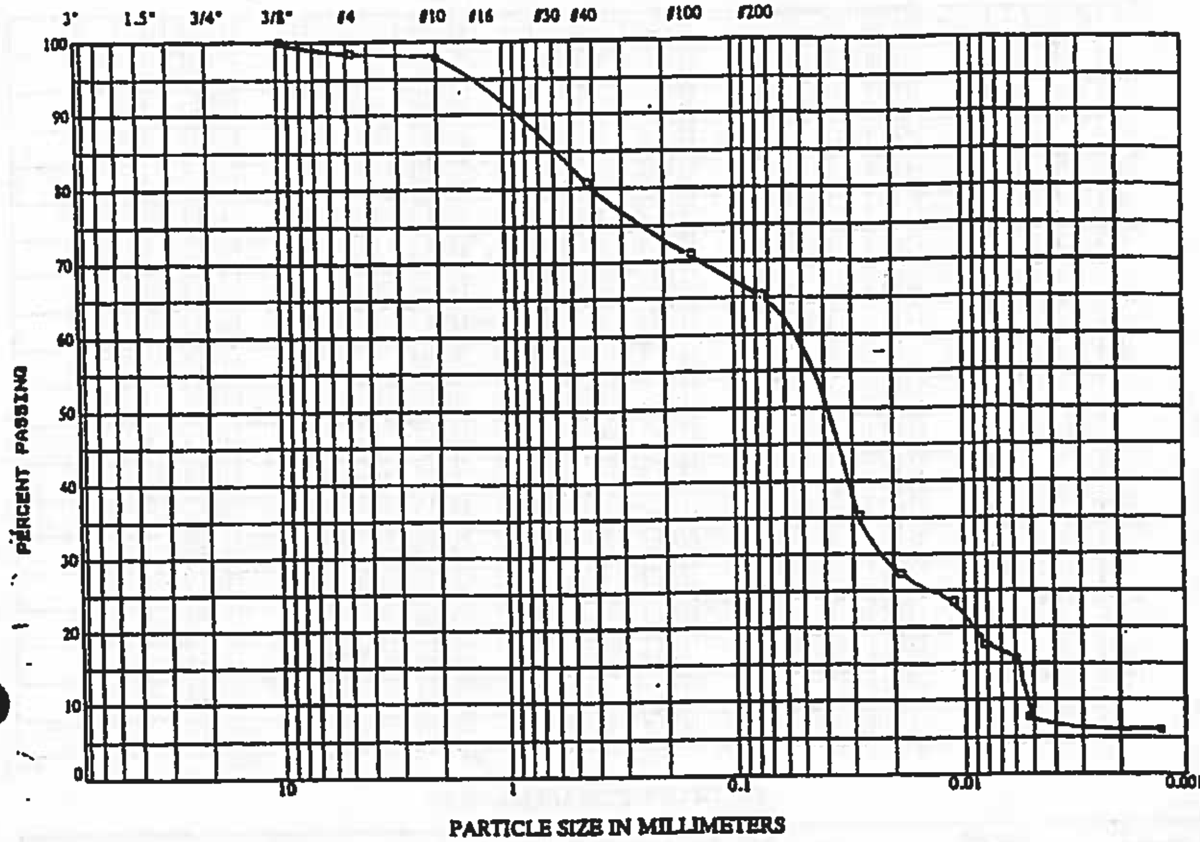
MOISTURE
W=Wet
M=Moist
D=Damp
d=Dry

SORTING
P=Poorly
M=Moderate
W=Well

DENSITY
s=Soft
M=Medium
S=Stiff
VS=Very stiff
H=Hard
v=Very loose
L=Loose
m=Medium
D=Dense
VD=Very dense

PLASTICITY
NA=Not applicable
NP=Nonplastic
L=Low plasticity
M=Medium plasticity
H=High plasticity

SIEVE ANALYSIS | HYDROMETER ANALYSIS



UNIFIED	GRAVEL		SAND				SILT		CLAY
	coarse	fine	coarse	medium	fine				
ASTM	GRAVEL		SAND				SILT	CLAY	
			coarse	medium	fine				
USDA	GRAVEL		SAND					SILT	CLAY
	coarse	fine	v.coarse	coarse	medium	fine	v.fine		

SIEVE ANALYSIS DATA

SIEVE	PERCENT PASSING
3/8"	100.0
4	98.4
10	97.9
40	80.7
100	70.9
200	65.4

DESIGN DATA

Percent of Gravel = 1.6
Percent of Sand = 33.0
Percent of Silt = 58.9
Percent of Clay = 6.5

CLASSIFICATION SUMMARY

Liquid Limit =
Plastic Limit =
Plasticity Index = NP = Non-Plastic
Natural Moisture = 215.2%
L.O.I. =

File No. 02-93-00037

COMBINED PARTICLE SIZE DISTRIBUTION

PROJECT: CECO

CLIENT:

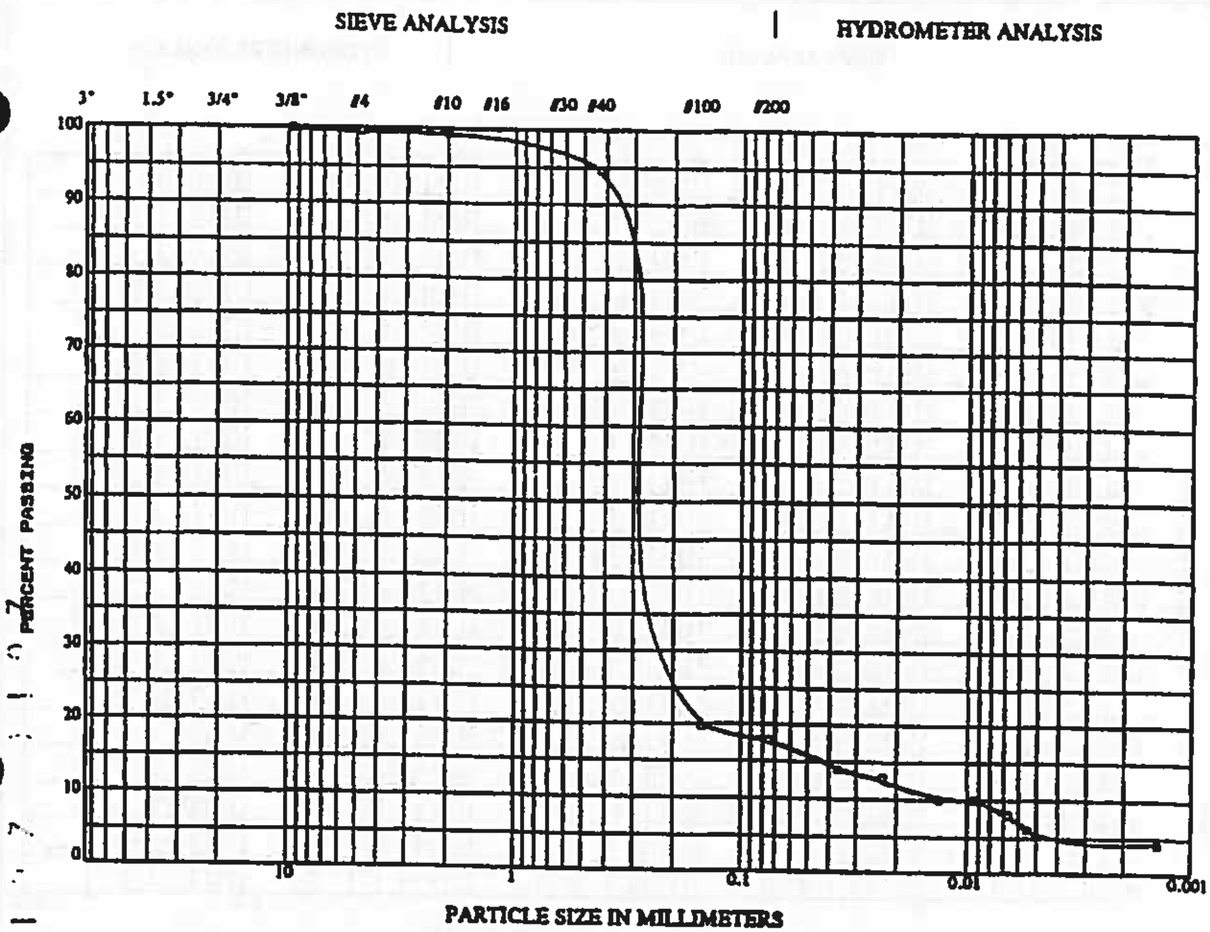
SAMPLE DESCRIPTION: Black ORGANIC PEAT (OH)

ATEC Associates, Inc.
Highway Avenue
Highland, Indiana

Date Tested:

REPORT No. MW-1 | BORING NO.: MW-1 | SAMPLE NO.: | DEPTH: 6.0' to

MWG13-15_47184



UNIFIED	GRAVEL: coarse	GRAVEL: fine	SAND: coarse	SAND: medium	SAND: fine		SILT	CLAY
ASTM	GRAVEL		SAND: coarse	SAND: medium	SAND: fine		SILT	CLAY
USDA	GRAVEL: coarse	GRAVEL: fine	SAND: v.coarse	SAND: coarse	SAND: medium	SAND: fine	SAND: v.fine	SILT	CLAY

SIEVE ANALYSIS DATA

SIEVE	PERCENT PASSING
3/8"	100.0
4	99.7
10	99.5
40	94.7
100	19.7
200	17.9

DESIGN DATA

Percent of Gravel = 0.3
Percent of Sand = 81.8
Percent of Silt = 13.3
Percent of Clay = 4.6

CLASSIFICATION SUMMARY

Liquid Limit =
Plastic Limit =
Plasticity Index = NP = Non-Plastic
Natural Moisture = 40.9%
L.O.I. =

File No. 02-93-00037

COMBINED PARTICLE SIZE DISTRIBUTION

PROJECT: CECO

CLIENT: Metcalf & Eddy

SAMPLE DESCRIPTION: Black fine SAND, little silt, trace clay

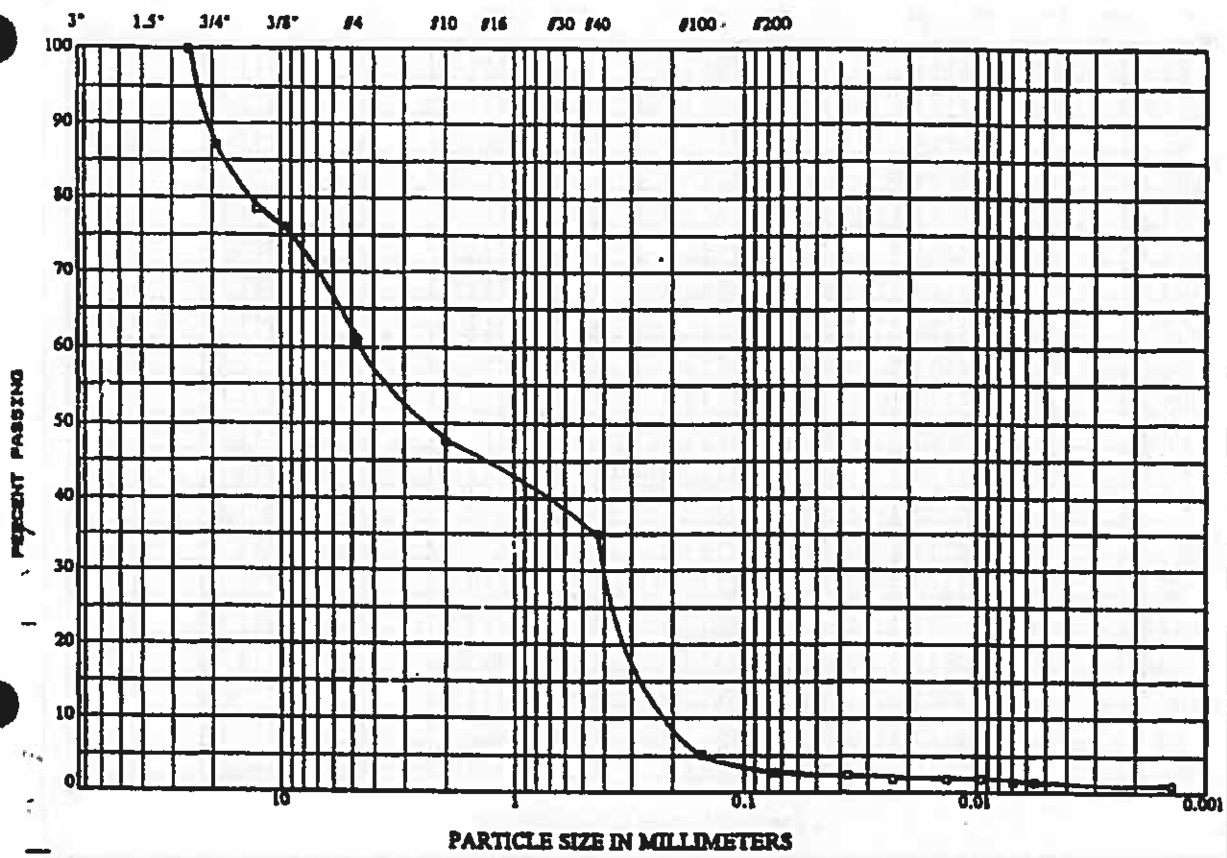
REPORT No. MW-1 BORING NO.: MW-1 SAMPLE NO.: DEPTH: 8.0' to 10.0'

ATEC Associates, Inc.
2646 Highway Avenue
Highland, Indiana 46322

Date Tested: 6/1/93

MWG13-15_47185

SIEVE ANALYSIS | HYDROMETER ANALYSIS



UNIFIED	GRAVEL		SAND			SILT		CLAY	
	coarse	fine	coarse	medium	fine				
ASTM	GRAVEL		SAND			SILT		CLAY	
			coarse	medium	fine				
USDA	GRAVEL		SAND					SILT	CLAY
	coarse	fine	v.coarse	coarse	medium	fine	v.fine		

SIEVE ANALYSIS DATA

SIEVE	PERCENT PASSING
1"	100.0
3/4"	87.1
1/2"	78.4
3/8"	76.0
4	60.9
10	47.6
40	35.0
100	5.1
200	2.7

DESIGN DATA

Percent of Gravel	=	39.1
Percent of Sand	=	58.2
Percent of Silt	=	1.6
Percent of Clay	=	1.1

CLASSIFICATION SUMMARY

Liquid Limit	=		
Plastic Limit	=		
Plasticity Index	=		NP = Non-Plastic
Natural Moisture	=	13.7%	
L.O.I.	=		

File No. 02-93-00037

COMBINED PARTICLE SIZE DISTRIBUTION

PROJECT
CBCO

CLIENT:
Metcalf & Eddy

SAMPLE DESCRIPTION:
Brown fine to coarse SAND, some [illegible] gravel, trace silt and clay, (GP-SP)

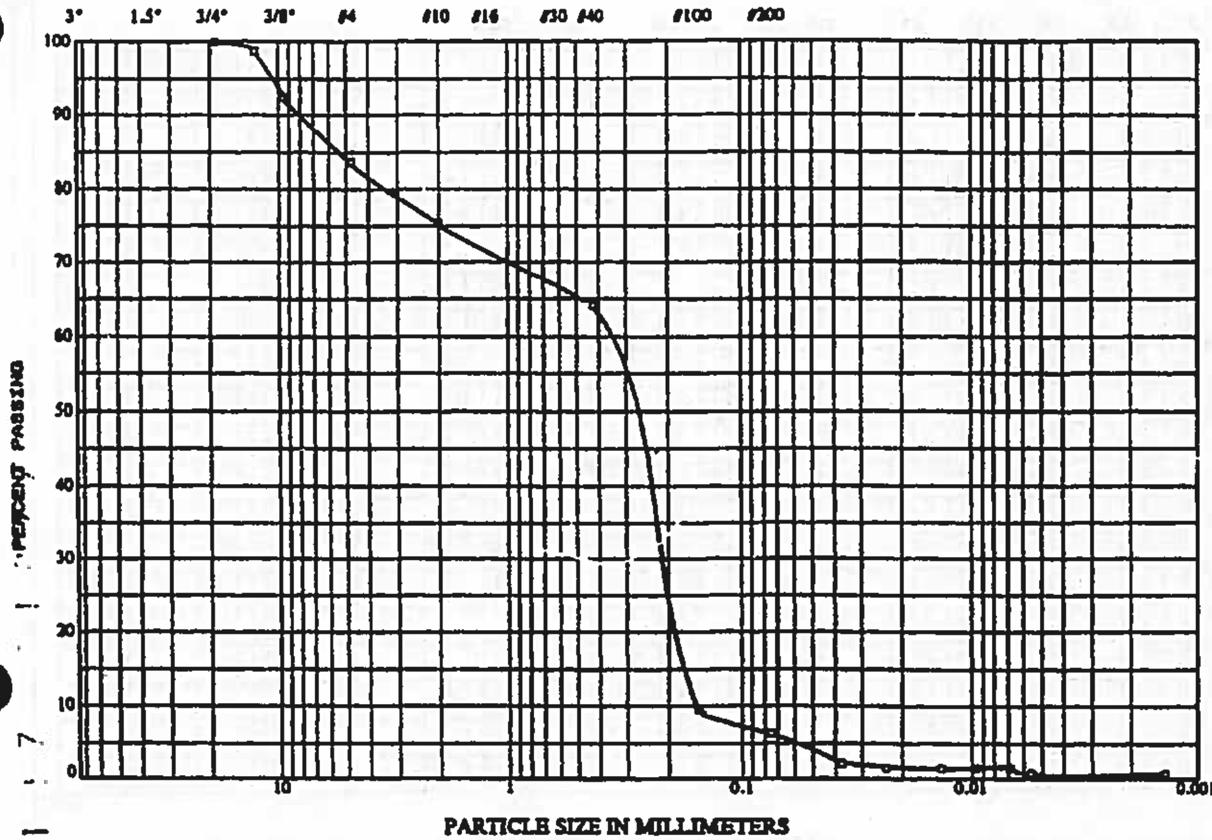
REPORT No. MW-5A
BORING NO.: MW-5A
SAMPLE NO.:
DEPTH: 2.0' to 4.0'

ATEC Associates, Inc.
2646 Highway Avenue
Highland, Indiana 46322

Date Tested:
6/1/93

MWG13-15_47186

SIEVE ANALYSIS | HYDROMETER ANALYSIS



UNIFIED	GRAVEL		SAND				SILT	CLAY
	coarse	fine	coarse	medium	fine			
ASTM	GRAVEL		SAND				SILT	CLAY
			coarse	medium	fine			
USDA	GRAVEL		SAND				SILT	CLAY
	coarse	fine	v.coarse	coarse	medium	fine	v.fine	

SIEVE ANALYSIS DATA

SIEVE	PERCENT PASSING
3/4"	100.0
1/2"	98.7
3/8"	92.5
4	83.6
10	75.3
40	64.2
100	9.6
200	6.3

DESIGN DATA

Percent of Gravel	=	16.4
Percent of Sand	=	77.3
Percent of Silt	=	5.5
Percent of Clay	=	0.8

CLASSIFICATION SUMMARY

Liquid Limit	=	
Plastic Limit	=	
Plasticity Index	=	
Natural Moisture	=	21.7%
L.O.I.	=	

NP = Non-Plastic

File No. 02-93-00037

PROJECT: CECO

REPORT No. MW-5B

COMBINED PARTICLE SIZE DISTRIBUTION

CLIENT: Metcalf & Eddy

SAMPLE DESCRIPTION: Brown fine to coarse SAND, little fine gravel, trace silt and clay, (SP)

BORING NO.: MW-5B SAMPLE NO.: DEPTH: 4.0' to 6.0'

ATEC Associates, Inc.
2646 Highway Avenue
Highland, Indiana 46322

Date Tested: 6/1/93

FIELD PARAMETER DATA (WELL DEVELOPMENT)
COMMONWEALTH EDISON
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

Monitoring Well Number	Date	Time	Total Gals. Removed	Field Parameter Data		
				pH	Temperature	Spec. Cond.
MW-1	5/24/93	1105		7.20	53.40	2400
		1110		7.17	52.20	2380
		1115	4	7.20	53.60	2480
MW-2	5/24/93	1048		7.26	53.70	1600
		1051		7.14	52.30	1570
		1053	4.5	7.10	52.10	1620
MW-3	5/24/93	1135		7.18	52.20	1850
		1140		7.02	50.70	1820
		1145	5.5	7.00	51.00	1820
MW-4	5/24/93	910		6.26	57.70	1850
		*		6.58	56.50	1820
		*		6.73	56.30	1830
		*		6.81	56.20	1820
		*		6.77	55.80	1810
		*	7.5	6.80	55.70	1820
MW-5	5/24/93	1200		6.89	53.00	1800
		1207		6.85	52.10	1780
		1220	5	6.94	51.90	1800
MW-6	5/24/93	1228		7.10	55.80	1800
		1231		7.03	52.50	1770
		1235	5.5	7.02	53.10	1820
MW-7	5/24/93	1014		7.00	50.70	1780
		1016		6.96	49.40	1760
		1020		7.02	49.70	1800
		*		6.99	48.70	1430
		*		6.99	50.30	1430
		*		6.98	48.30	1750
		*		6.99	49.50	1720
		*		7.00	50.00	1730
		*	4	7.00	48.60	1780

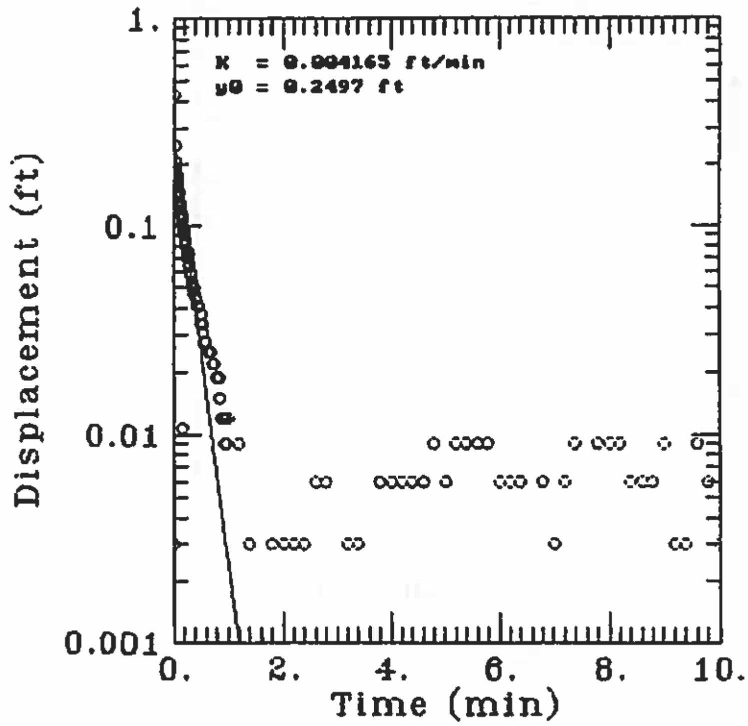
Specific Conductivity – umhos
Temperature – Fahrenheit
* – Time not recorded.

FIELD PARAMETER DATA (WELL PURGING*)
COMMONWEALTH EDISON
FORMER GRIESS-PFLEGER TANNERY
WAUKEGAN, ILLINOIS

Monitoring Well Number	Date	Time	Gals. Removed	Field Parameter Data		
				pH	Temperature	Spec. Cond.
MW-1	5/25/93	1002	1.30	7.31	53.50	2290
		1005	2.60	7.26	52.90	2320
		1009	3.90	7.17	53.40	2340
MW-2	5/25/93	840	1.10	7.31	54.50	1710
		843	2.20	7.15	52.70	1660
		846	3.30	7.12	53.20	1680
MW-3	5/24/93	1448	1.80	6.97	54.40	1910
		1455	3.60	6.97	53.20	1850
		1458	5.40	6.98	52.60	1860
MW-4	5/24/93	1403	1.60	6.97	56.90	1950
		1405	3.20	6.70	54.20	1820
		1408	4.80	6.67	54.80	1840
MW-5	5/24/93	1522	1.70	7.01	54.00	1890
		1528	3.40	6.90	51.50	1800
		1534	5.10	6.87	51.00	1760
MW-6	5/24/93	1613	1.80	7.20	55.50	1850
		1618	3.60	7.12	53.40	1770
		1622	5.40	7.18	53.50	1800
MW-7	5/24/93	1248	1.20	7.10	56.40	1248
		1250	2.40	7.09	54.50	1250
		1253	3.60	7.23	51.50	1253

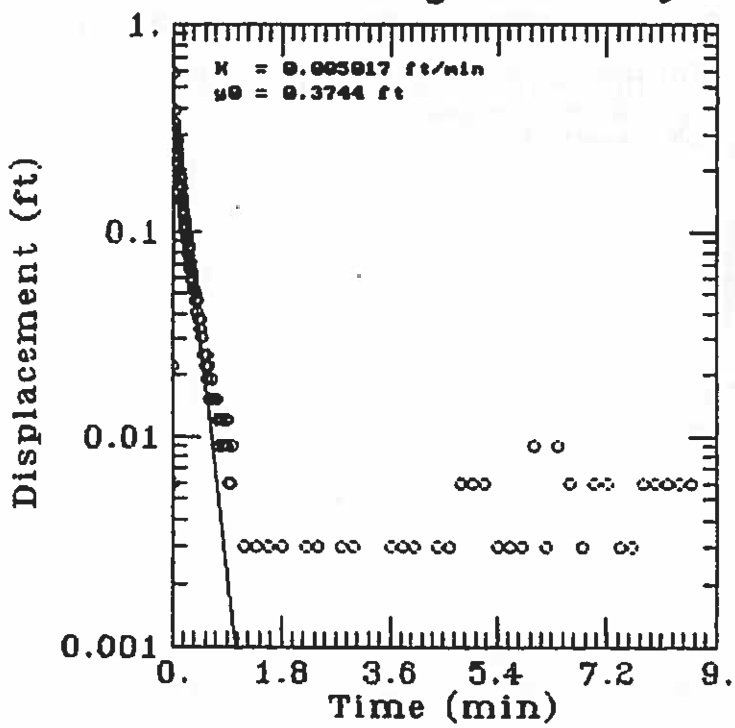
Specific Conductivity – umhos
Temperature – Fahrenheit
* – Water removed immediately before sample collection.

Former Greiss-Pfleger Tannery MW-1(F)



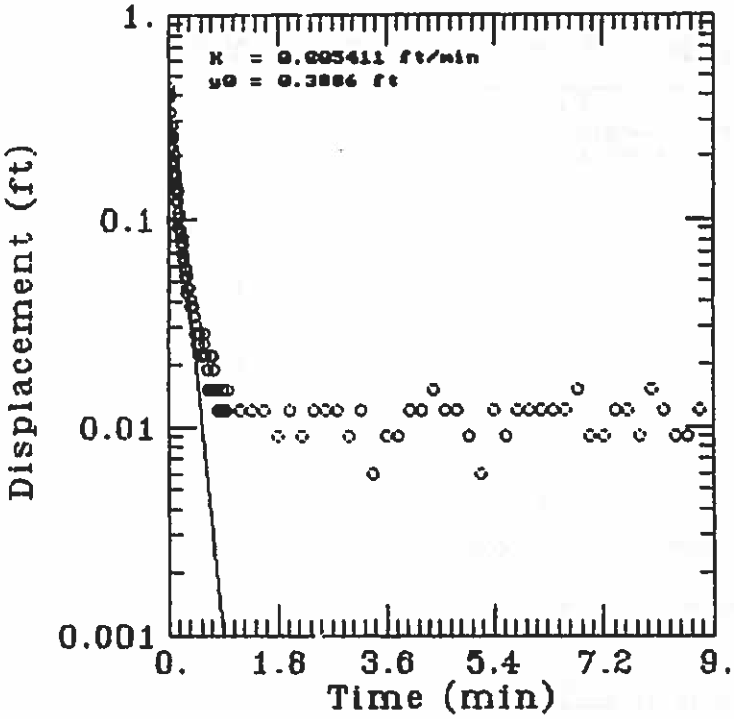
MWG13-15_47190

Former Greiss-Pfleger Tannery MW-1(R)



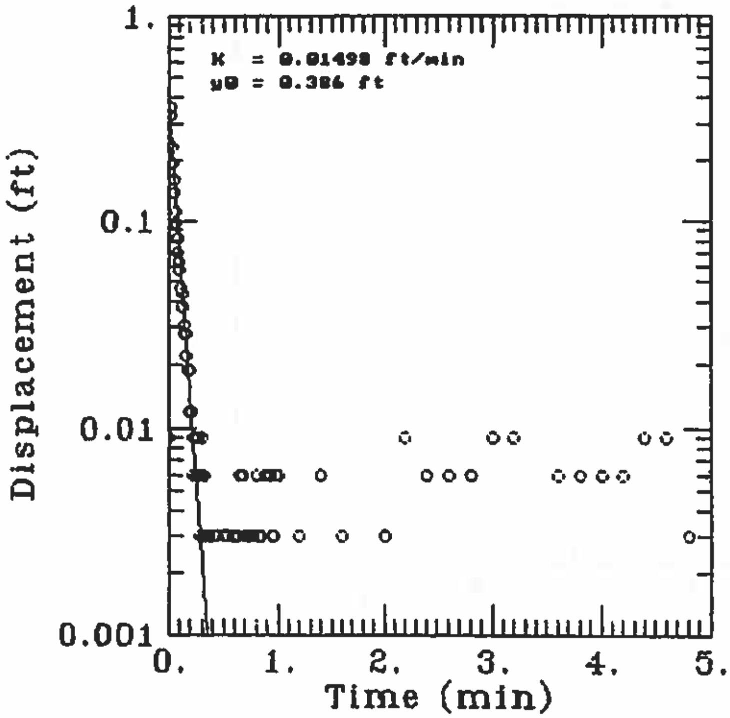
MWG13-15_47191

Former Greiss-Pfleger Tannery MW-2(R)

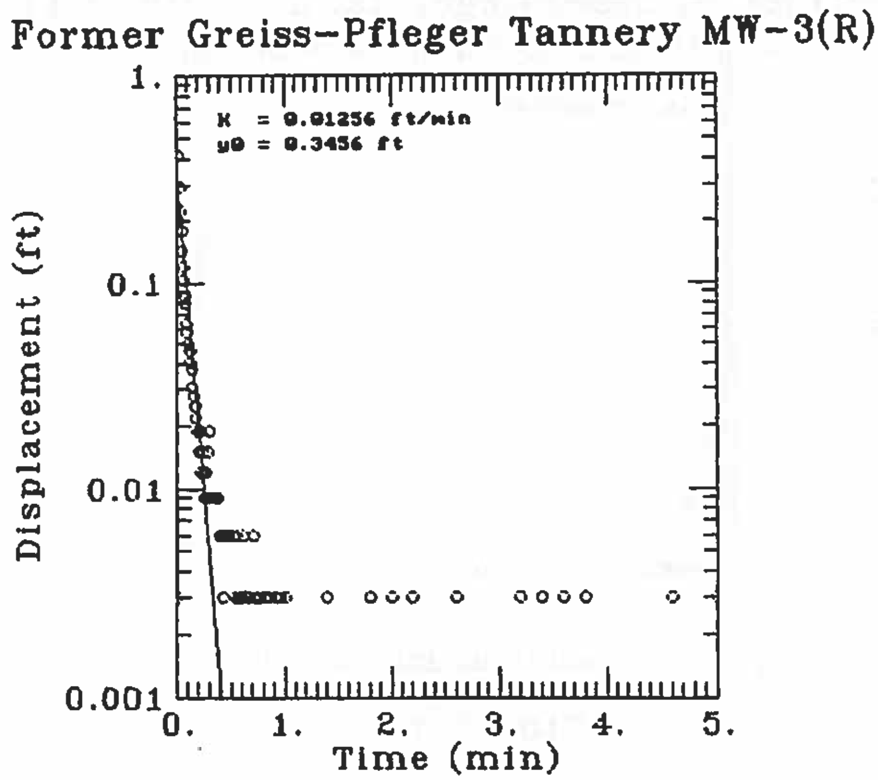


MWG13-15_47192

Former Greiss-Pfleger Tannery MW-3(F)



MWG13-15_47193



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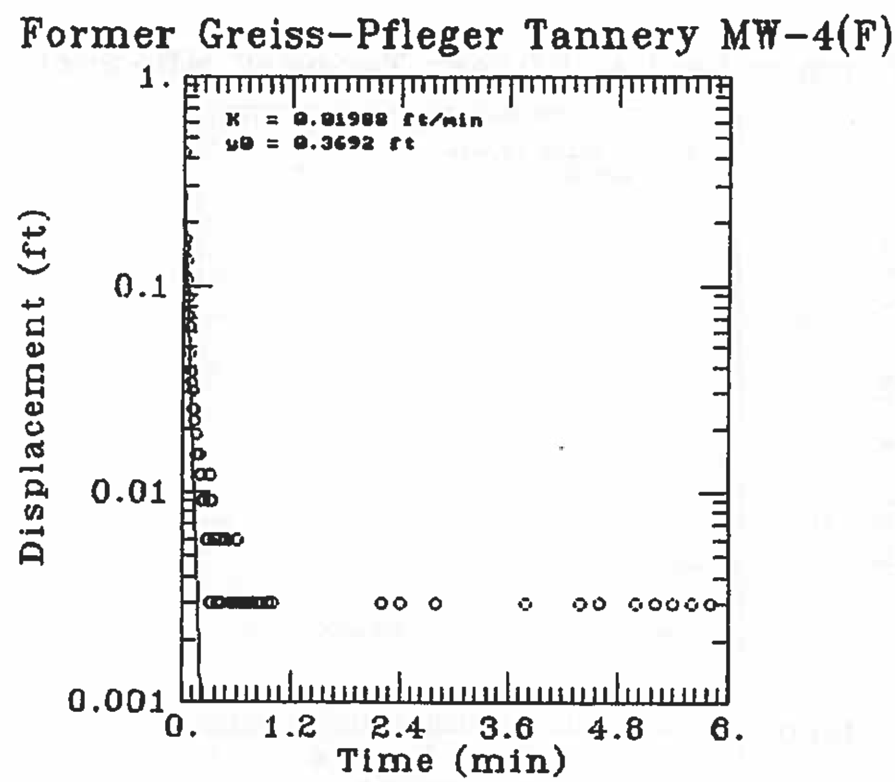

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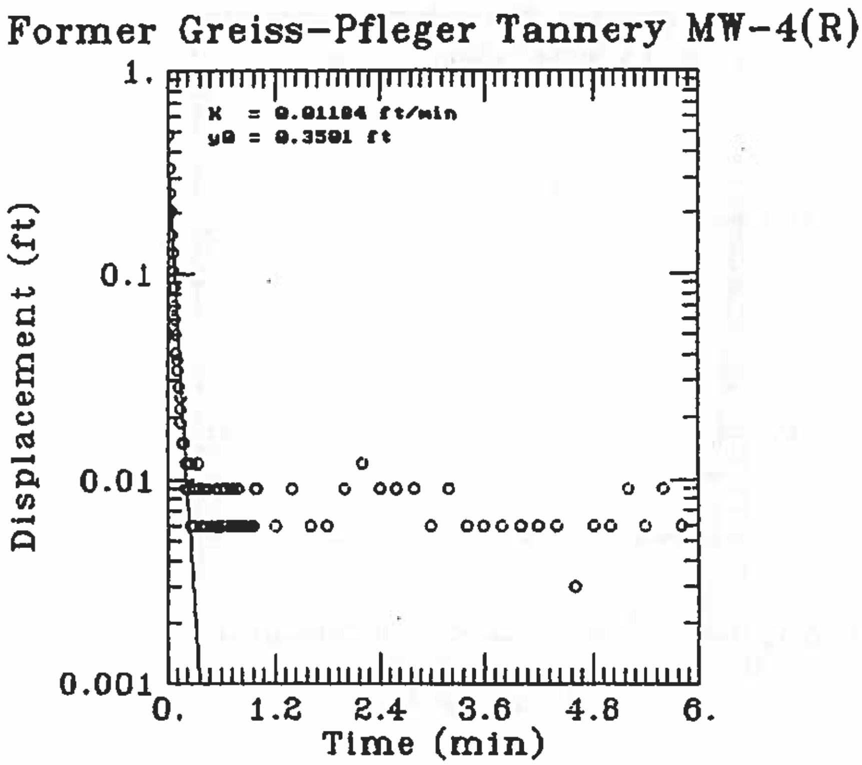

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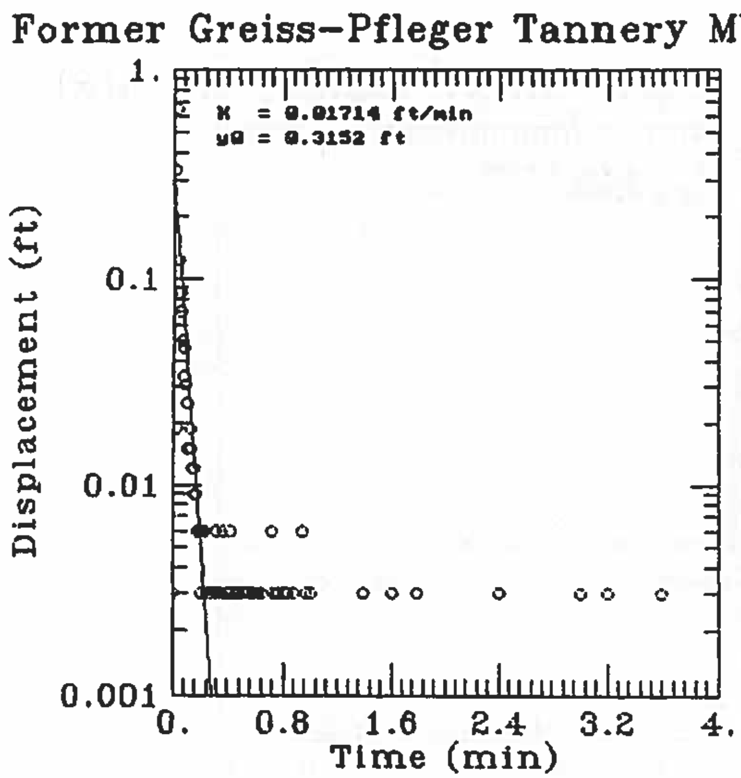

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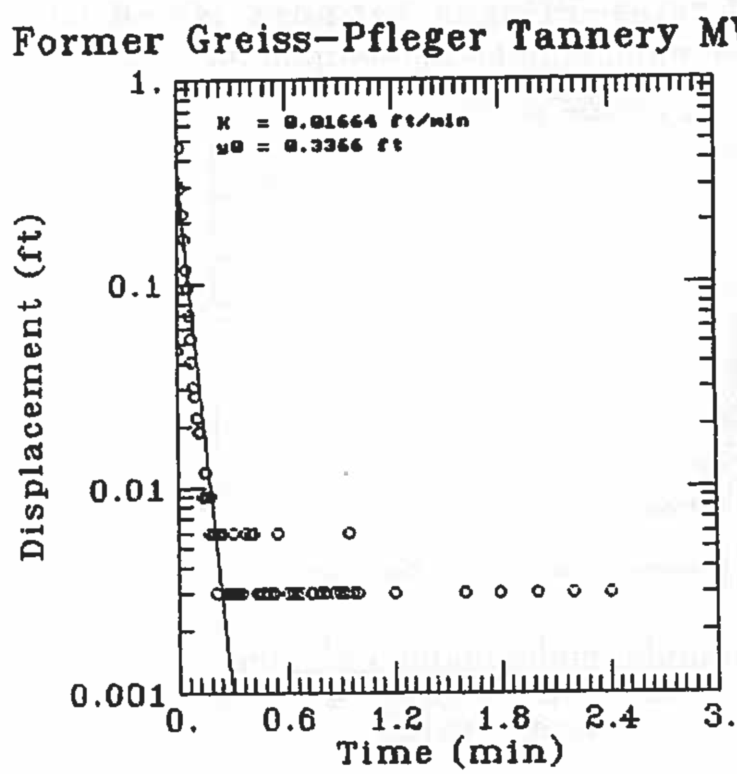
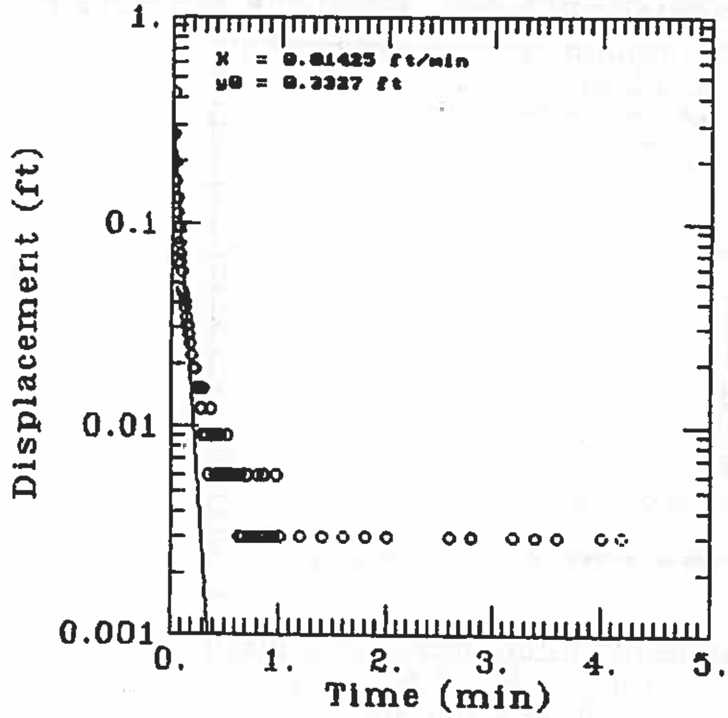
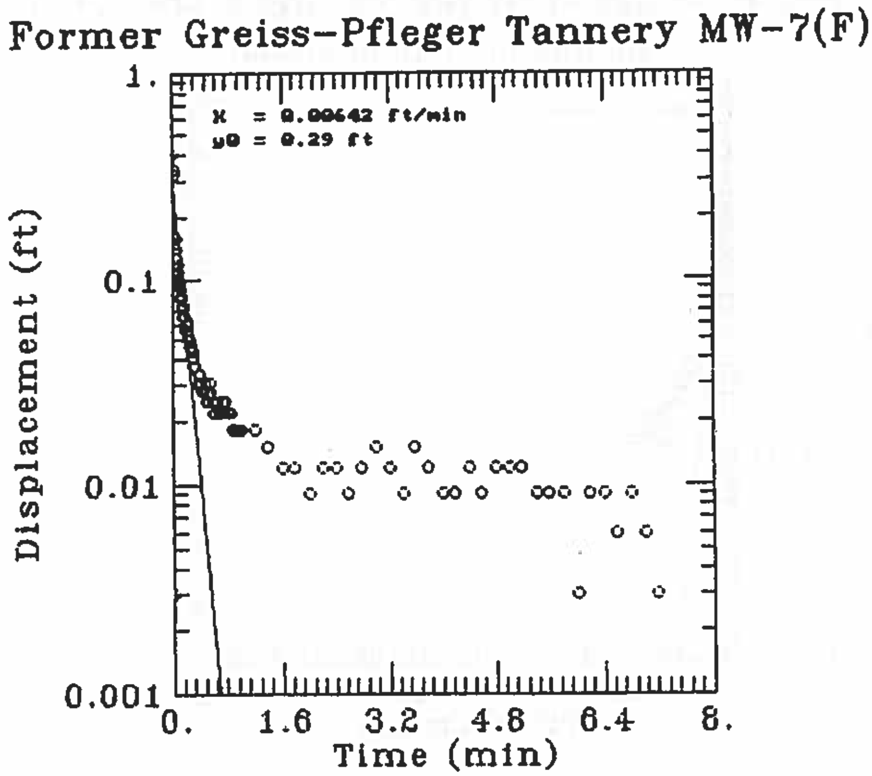


MWG13-15_47198

Former Greiss-Pfleger Tannery MW-6(R)





MWG13-15_47200

Former Greiss-Pfleger Tannery MW-7(R)

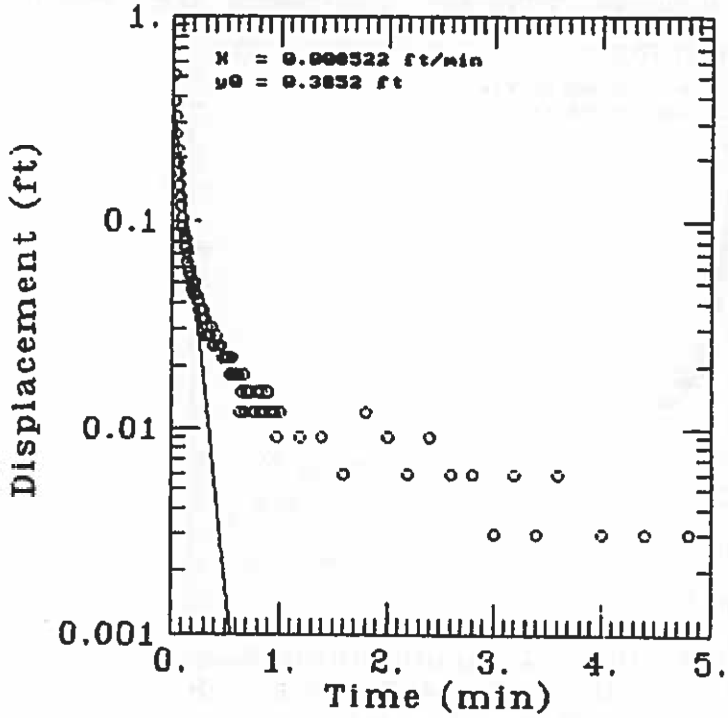


TABLE
COMMONWEATH EDISON
FORMER GRIESS-PFLEGER TANNERY
WELL MONITORING FORM

Project#: 010487-3000-100 Geologist: S.I.
Date: May 24, 1993

WELL #	WELL ID	TOC ELEV. (FEET)	TOTAL DEPTH (FEET)	GROUND ELEVATION (FEET)	DTW (FEET)	CORR. WAT ELEV (FEET)
1	MW-1	99.48	13.64	97.66	5.68	91.98
2	MW-2	101.60	14.05	98.92	7.67	91.25
3	MW-3	97.89	15.40	95.64	4.63	91.01
4	MW-4	99.71	15.22	97.61	5.60	92.01
5	MW-5	98.56	15.45	96.71	5.39	91.32
6	MW-6	98.44	15.38	96.10	4.87	91.23
7	MW-7	104.03	15.50	101.96	8.43	93.53

Project#: 010487-3000-100 Geologist: S.I.
Date: June 4, 1993

WELL #	WELL ID	TOC ELEV. (FEET)	TOTAL DEPTH (FEET)	GROUND ELEVATION (FEET)	DTW (FEET)	CORR. WAT ELEV (FEET)
1	MW-1	99.48	13.64	97.66	5.82	91.84
2	MW-2	101.60	14.05	98.92	7.91	91.01
3	MW-3	97.89	15.40	95.64	4.78	90.86
4	MW-4	99.71	15.22	97.61	5.79	91.82
5	MW-5	98.56	15.45	96.71	5.50	91.21
6	MW-6	98.44	15.38	96.10	5.03	91.07
7	MW-7	104.03	15.50	101.96	8.53	93.43

Environmental Science & Engineering, Inc.
8901 North Industrial Road Peoria, IL 61615-1509
Phone (309) 692-4422 Lab Fax (309) 692-5233

An IEPA Cont... Laboratory

TO: METCALF & EDDY
1 PIERCE PLACE, SUITE 1400 W.
ITASCA, IL 60143
ATTN: MS. DENISE STORY

PAGE NUMBER: 1
REPORT DATE: 05-04-93
DATE RECEIVED: 04-16-93
PROJECT NUMBER: 592-5841
P.O. NUMBER: 010487-2000-100

CLIENT PROJECT NAME: COMMONWEALTH EDISON

ESE SAMPLE		11995*1	11995*2			
SAMPLE DATE		04/15/93	04/15/93			
DESCRIPTION	UNITS	MUNICIPAL W. WATER	TRIP BLANK WATER	METHOD NO.	DATE ANALYZED	ANALYST
*VOLATILE ORGANIC COMPOUNDS						
CHLOROMETHANE	UG/L	< 2	< 2	8240	04-27-93	NEB
BROMOMETHANE	UG/L	< 2	< 2	8240	04-27-93	NEB
VINYL CHLORIDE	UG/L	< 0.5	< 0.5	8240	04-27-93	NEB
CHLOROETHANE	UG/L	< 2	< 2	8240	04-27-93	NEB
METHYLENE CHLORIDE	UG/L	1B	2B	8240	04-27-93	NEB
ACETONE	UG/L	< 2	< 2	8240	04-27-93	NEB
CARBON DISULFIDE	UG/L	< 2	< 2	8240	04-27-93	NEB
1,1-DICHLOROETHENE	UG/L	< 0.5	< 0.5	8240	04-27-93	NEB
1,1-DICHLOROETHANE	UG/L	< 1	< 1	8240	04-27-93	NEB
TRANS-1,2-DICHLOROETHENE	UG/L	< 1	< 1	8240	04-27-93	NEB
CHLOROFORM	UG/L	11	< 1	8240	04-27-93	NEB
1,2-DICHLOROETHANE	UG/L	< 0.5	< 0.5	8240	04-27-93	NEB
2-BUTANONE	UG/L	< 2	< 2	8240	04-27-93	NEB
1,1,1-TRICHLOROETHANE	UG/L	< 0.5	< 0.5	8240	04-27-93	NEB
CARBON TETRACHLORIDE	UG/L	< 0.5	< 0.5	8240	04-27-93	NEB
VINYL ACETATE	UG/L	< 2	< 2	8240	04-27-93	NEB
BROMODICHLOROMETHANE	UG/L	6	< 1	8240	04-27-93	NEB

B = Compound found in blank.
*Samples run using 25 ml aliquot.

Report Approved by: Jim T. McQuellon
Project Manager

ESE Environmental Science & Engineering, Inc. 8901 North Industrial Road Peoria, IL 61615-1509 Phone (309) 692-4422 Lab Fax (309) 692-5232

An IEPA Contract Laboratory

TO: METCALF & EDDY
1 PIERCE PLACE, SUITE 1400 W.
ITASCA, IL 60143
ATTN: MS. DENISE STORY

PAGE NUMBER: 2
REPORT DATE: 05-04-93
DATE RECEIVED: 04-16-93
PROJECT NUMBER: 592-5841
P.O. NUMBER: 010487-2000-100

CLIENT PROJECT NAME: COMMONWEALTH EDISON

DESCRIPTION	UNITS	MUNICIPAL W. WATER	TRIP BLANK WATER	METHOD NO.	DATE ANALYZED	ANALYST
ESE SAMPLE		11995*1	11995*2			
SAMPLE DATE		04/15/93	04/15/93			
*VOLATILE ORGANIC COMPOUNDS (Cont'd)						
1,2-DICHLOROPROPANE	UG/L	< 1	< 1	8240	04-27-93	NEB
CIS-1,3-DICHLOROPROPENE	UG/L	< 1	< 1	8240	04-27-93	NEB
TRICHLOROETHENE	UG/L	< 0.5	< 0.5	8240	04-27-93	NEB
DIBROMOCHLOROMETHANE	UG/L	2	< 1	8240	04-27-93	NEB
1,1,2-TRICHLOROETHANE	UG/L	< 1	< 1	8240	04-27-93	NEB
BENZENE	UG/L	< 0.5	< 0.5	8240	04-27-93	NEB
TRANS-1,3-DICHLOROPROPENE	UG/L	< 1	< 1	8240	04-27-93	NEB
BROMOFORM	UG/L	< 1	< 1	8240	04-27-93	NEB
4-METHYL-2-PENTANONE	UG/L	< 2	< 2	8240	04-27-93	NEB
2-HEXANONE	UG/L	< 2	< 2	8240	04-27-93	NEB
TETRACHLOROETHENE	UG/L	< 1	< 1	8240	04-27-93	NEB
1,1,2,2-TETRACHLOROETHANE	UG/L	< 1	< 1	8240	04-27-93	NEB
TOLUENE	UG/L	< 1	< 1	8240	04-27-93	NEB
CHLOROBENZENE	UG/L	< 1	< 1	8240	04-27-93	NEB
ETHYLBENZENE	UG/L	< 1	< 1	8240	04-27-93	NEB
STYRENE	UG/L	< 1	< 1	8240	04-27-93	NEB
XYLENES,TOTAL	UG/L	< 2	< 2	8240	04-27-93	NEB
CIS-1,2-DICHLOROETHENE	UG/L	< 1	< 1	8240	04-27-93	NEB

*Samples run using 25 ml aliquot.

Report Approved by: Jim T. McQuellen
Project Manager

MWG13-15_47204

Environmental Science & Engineering, Inc.
8901 North Industrial Road Peoria, IL 61615-1509
Phone (309) 692-4422 Lab Fax (309) 692-5232
An IEPA Contract Laboratory

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1 PIERCE PLACE, SUITE 1400 W.
ITASCA, IL 60143
ATTN: MS. DENISE STORY

PAGE NUMBER: 3
REPORT DATE: 05-04-93
DATE RECEIVED: 04-16-93
PROJECT NUMBER: 592-5841
P.O. NUMBER: 010487-2000-I00

CLIENT PROJECT NAME: COMMONWEALTH EDISON

ESE SAMPLE 11995*1
SAMPLE DATE 04/15/93
EXTRACTION DATE 04/20/93

DESCRIPTION	UNITS	MUNICIPAL W. WATER	METHOD NO.	DATE ANALYZED	ANALYST
BASE-NEUTRALS					
BIS(2-CHLOROETHYL) ETHER	UG/L	< 10	8270	04-26-93	DAH
1,3-DICHLOROBENZENE	UG/L	< 10	8270	04-26-93	DAH
1,4-DICHLOROBENZENE	UG/L	< 10	8270	04-26-93	DAH
BENZYL ALCOHOL	UG/L	< 10	8270	04-26-93	DAH
1,2-DICHLOROBENZENE	UG/L	< 10	8270	04-26-93	DAH
BIS(2-CHLOROISOPROPYL) ETHER	UG/L	< 10	8270	04-26-93	DAH
N-NITROSODI-N-PROPYLAMINE	UG/L	< 10	8270	04-26-93	DAH
HEXACHLOROETHANE	UG/L	< 10	8270	04-26-93	DAH
NITROBENZENE	UG/L	< 10	8270	04-26-93	DAH
ISOPHORONE	UG/L	< 10	8270	04-26-93	DAH
BIS(2-CHLOROETHOXY) METHANE	UG/L	< 10	8270	04-26-93	DAH
1,2,4-TRICHLOROBENZENE	UG/L	< 10	8270	04-26-93	DAH
NAPHTHALENE	UG/L	< 10	8270	04-26-93	DAH
4-CHLOROANILINE	UG/L	< 10	8270	04-26-93	DAH
HEXACHLOROBUTADIENE	UG/L	< 10	8270	04-26-93	DAH
2-METHYLNAPHTHALENE	UG/L	< 10	8270	04-26-93	DAH

Report Approved by: Jim T. McQuellon
Project Manager

ESE Environmental Science & Engineering, Inc.
8401 North Industrial Road Peoria, IL 61615-1509
Phone (309) 692-4422 Lab Fax (309) 692-5232
An IEPA Contract Laboratory

TO: METCALF & EDDY
1 PIERCE PLACE, SUITE 1400 W.
ITASCA, IL 60143
ATTN: MS. DENISE STORY

PAGE NUMBER: 4
REPORT DATE: 05-04-93
DATE RECEIVED: 04-16-93
PROJECT NUMBER: 592-5841
P.O. NUMBER: 010487-2000-100

CLIENT PROJECT NAME: COMMONWEALTH EDISON

ESE SAMPLE 11995*1
SAMPLE DATE 04/15/93
EXTRACTION DATE 04/20/93

DESCRIPTION	UNITS	MUNICIPAL W. WATER	METHOD NO.	DATE ANALYZED	ANALYST
BASE-NEUTRALS (Cont'd)					
HEXACHLOROCYCLOPENTADIENE	UG/L	< 10	8270	04-26-93	DAH
2-CHLORONAPHTHALENE	UG/L	< 10	8270	04-26-93	DAH
2-NITROANILINE	UG/L	< 50	8270	04-26-93	DAH
DIMETHYL PHTHALATE	UG/L	< 10	8270	04-26-93	DAH
ACENAPHTHYLENE	UG/L	< 10	8270	04-26-93	DAH
2,6-DINITROTOLUENE	UG/L	< 10	8270	04-26-93	DAH
3-NITROANILINE	UG/L	< 50	8270	04-26-93	DAH
ACENAPHTHENE	UG/L	< 10	8270	04-26-93	DAH
DIBENZOFURAN	UG/L	< 10	8270	04-26-93	DAH
2,4-DINITROTOLUENE	UG/L	< 10	8270	04-26-93	DAH
DIETHYL PHTHALATE	UG/L	< 10	8270	04-26-93	DAH
4-CHLOROPHENYLPHENYL ETHER	UG/L	< 10	8270	04-26-93	DAH
FLUORENE	UG/L	< 10	8270	04-26-93	DAH
4-NITROANILINE	UG/L	< 50	8270	04-26-93	DAH
N-NITROSODIPHENYLAMINE	UG/L	< 10	8270	04-26-93	DAH
4-BROMOPHENYLPHENYL ETHER	UG/L	< 10	8270	04-26-93	DAH
HEXACHLOROBENZENE	UG/L	< 10	8270	04-26-93	DAH

Report Approved by: Jim C. McQuellon
Project Manager

MWG13-15_47206

Environmental Science & Engineering, Inc.
8901 North Industrial Road Peoria, IL 61615-1589
Phone (309) 692-4422 Lab Fax (309) 692-5232
An IEPA Contract Laboratory

TO: METCALF & EDDY
1 PIERCE PLACE, SUITE 1400 W.
ITASCA, IL 60143
ATTN: MS. DENISE STORY

PAGE NUMBER: 5
REPORT DATE: 05-04-93
DATE RECEIVED: 04-16-93
PROJECT NUMBER: 592-5841
P.O. NUMBER: 010487-2000-100

CLIENT PROJECT NAME: COMMONWEALTH EDISON

ESE SAMPLE 11995*1
SAMPLE DATE 04/15/93
EXTRACTION DATE 04/20/93

DESCRIPTION	UNITS	MUNICIPAL W. WATER	METHOD NO.	DATE ANALYZED	ANALYST
BASE-NEUTRALS (Cont'd)					
PHENANTHRENE	UG/L	< 10	8270	04-26-93	DAH
ANTHRACENE	UG/L	< 10	8270	04-26-93	DAH
DI-N-BUTYL PHTHALATE	UG/L	< 10	8270	04-26-93	DAH
FLUORANTHENE	UG/L	< 10	8270	04-26-93	DAH
PYRENE	UG/L	< 10	8270	04-26-93	DAH
BUTYL BENZYL PHTHALATE	UG/L	< 10	8270	04-26-93	DAH
3,3'-DICHLOROBENZIDINE	UG/L	< 20	8270	04-26-93	DAH
BENZO(A)ANTHRACENE	UG/L	< 10	8270	04-26-93	DAH
CHRYSENE	UG/L	< 10	8270	04-26-93	DAH
BIS(2-ETHYLHEXYL) PHTHALATE	UG/L	< 10	8270	04-26-93	DAH
DI-N-OCTYL PHTHALATE	UG/L	< 10	8270	04-26-93	DAH
BENZO(B)FLUORANTHENE	UG/L	< 10	8270	04-26-93	DAH
BENZO(K)FLUORANTHENE	UG/L	< 10	8270	04-26-93	DAH
BENZO(A)PYRENE	UG/L	< 10	8270	04-26-93	DAH
INDENO(1,2,3-CD)PYRENE	UG/L	< 10	8270	04-26-93	DAH
DIBENZO(A,H)ANTHRACENE	UG/L	< 10	8270	04-26-93	DAH
BENZO(GHI)PERYLENE	UG/L	< 10	8270	04-26-93	DAH

Report Approved by: Jim K. McQuellon
Project Manager

Environmental Science & Engineering, Inc.
8901 North Industrial Road Peoria IL 61615-1509
Phone (309) 692-4422 Lab Fax (309) 692-5232
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TO: METCALF & EDDY
1 PIERCE PLACE, SUITE 1400 W.
ITASCA, IL 60143
ATTN: MS. DENISE STORY

PAGE NUMBER: 6
REPORT DATE: 05-04-93
DATE RECEIVED: 04-16-93
PROJECT NUMBER: 592-5841
P.O. NUMBER: 010487-2000-100

CLIENT PROJECT NAME: COMMONWEALTH EDISON

ESE SAMPLE 11995*1
SAMPLE DATE 04/15/93
*EXTRACTION DATE 04/20/93, - 04/22/93

DESCRIPTION	UNITS	MUNICIPAL W. WATER	METHOD NO.	DATE ANALYZED	ANALYST
ACIDS					
=====					
PHENOL	UG/L	< 10	8270	04-26-93	DAH
2-CHLOROPHENOL	UG/L	< 10	8270	04-26-93	DAH
2-METHYL PHENOL	UG/L	< 10	8270	04-26-93	DAH
4-METHYL PHENOL	UG/L	< 10	8270	04-26-93	DAH
2-NITROPHENOL	UG/L	< 10	8270	04-26-93	DAH
2,4-DIMETHYLPHENOL	UG/L	< 10	8270	04-26-93	DAH
BENZOIC ACID	UG/L	< 50	8270	04-26-93	DAH
2,4-DICHLOROPHENOL	UG/L	< 10	8270	04-26-93	DAH
4-CHLORO-3-METHYL PHENOL	UG/L	< 10	8270	04-26-93	DAH
2,4,6-TRICHLOROPHENOL	UG/L	< 10	8270	04-26-93	DAH
2,4,5-TRICHLOROPHENOL	UG/L	< 10	8270	04-26-93	DAH
2,4-DINITROPHENOL	UG/L	< 50	8270	04-26-93	DAH
4-NITROPHENOL	UG/L	< 50	8270	04-26-93	DAH
2-METHYL-4,6-DINITROPHENOL	UG/L	< 50	8270	04-26-93	DAH
PENTACHLOROPHENOL	UG/L	< 50	8270	04-26-93	DAH

*Sample was reextracted for acid argets due to low recoveries in initial analysis.

Report Approved by: Jim J. McQuellon
Project Manager

MWG13-15_47208

Environmental Science & Engineering, Inc.
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I PIERCE PLACE, SUITE 1400 W.
ITASCA, IL 60143
ATTN: MS. DENISE STORY

PAGE NUMBER: 7
REPORT DATE: 05-04-93
DATE RECEIVED: 04-16-93
PROJECT NUMBER: 592-5841
P.O. NUMBER: 010487-2000-100

CLIENT PROJECT NAME: COMMONWEALTH EDISON

ESE SAMPLE 11995*1
SAMPLE DATE 04/15/93
EXTRACTION DATE 04/21/93

DESCRIPTION	UNITS	MUNICIPAL W. WATER	METHOD NO.	DATE ANALYZED	ANALYST
PESTICIDES					
BHC,ALPHA	UG/L	< 0.05	608	05-04-93	RDU
BHC,BETA	UG/L	< 0.05	608	05-04-93	RDU
BHC,DELTA	UG/L	< 0.05	608	05-04-93	RDU
BHC,GAMMA(LINDANE)	UG/L	< 0.05	608	05-04-93	RDU
HEPTACHLOR	UG/L	< 0.05	608	05-04-93	RDU
ALDRIN	UG/L	< 0.05	608	05-04-93	RDU
HEPTACHLOR EPOXIDE	UG/L	< 0.05	608	05-04-93	RDU
ENDOSULFAN I	UG/L	< 0.05	608	05-04-93	RDU
DIELDRIN	UG/L	< 0.10	608	05-04-93	RDU
4,4'-DDE	UG/L	< 0.10	608	05-04-93	RDU
ENDRIN	UG/L	< 0.10	608	05-04-93	RDU
ENDOSULFAN II	UG/L	< 0.10	608	05-04-93	RDU
4,4'-DDD	UG/L	< 0.10	608	05-04-93	RDU
ENDOSULFAN SULFATE	UG/L	< 0.10	608	05-04-93	RDU
4,4'-DDT	UG/L	< 0.10	608	05-04-93	RDU
METHOXYCHLOR	UG/L	< 0.50	608	05-04-93	RDU
ENDRIN ALDEHYDE	UG/L	< 0.10	608	05-04-93	RDU
ALPHA-CHLORDANE	UG/L	< 0.05	608	05-04-93	RDU
GAMMA-CHLORDANE	UG/L	< 0.05	608	05-04-93	RDU
TOXAPHENE	UG/L	< 5.0	608	05-04-93	RDU

Report Approved by: Jim D. McQuerron
Project Manager

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PAGE NUMBER: 8
REPORT DATE: 05-04-93
DATE RECEIVED: 04-16-93
PROJECT NUMBER: 592-5841
P.O. NUMBER: 010487-2000-100

TO: METCALF & EDDY
1 PIERCE PLACE, SUITE 1400 W.
ITASCA, IL 60143
ATTN: MS. DENISE STORY

CLIENT PROJECT NAME: COMMONWEALTH EDISON

ESE SAMPLE 11995*1
SAMPLE DATE 04/15/93

DESCRIPTION	UNITS	MUNICIPAL W. WATER	METHOD NO.	DATE ANALYZED	ANALYST
PCB'S					
AROCLOR-1016	UG/L	< 1.0	608	05-04-93	RDU
AROCLOR-1221	UG/L	< 2.0	608	05-04-93	RDU
AROCLOR-1232	UG/L	< 1.0	608	05-04-93	RDU
AROCLOR-1242	UG/L	< 1.0	608	05-04-93	RDU
AROCLOR-1248	UG/L	< 1.0	608	05-04-93	RDU
AROCLOR-1254	UG/L	< 1.0	608	05-04-93	RDU
AROCLOR-1260	UG/L	< 1.0	608	05-04-93	RDU
OTHER PARAMETERS					
PH	UNITS	7.54	150.1	04-20-93	FTJ

Report Approved by:
Jim S. McQuellon
Project Manager

MWG13-15_47210

Environmental Science & Engineering, Inc.
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TO: METCALF & EDDY
1 PIERCE PLACE, SUITE 1400 W.
ITASCA, IL 60143
ATTN: MS. DENISE STORY

PAGE NUMBER: 9
REPORT DATE: 05-04-93
DATE RECEIVED: 04-16-93
PROJECT NUMBER: 592-5841
P.O. NUMBER: 010487-2000-100

CLIENT PROJECT NAME: COMMONWEALTH EDISON

ESE SAMPLE 11995*1
SAMPLE DATE 04/15/93

DESCRIPTION	UNITS	MUNICIPAL W. WATER	METHOD NO.	DATE ANALYZED	ANALYST
METALS					
ALUMINUM	MG/L	0.085	200.7	04-21-93	ELZ
ANTIMONY	MG/L	< 0.050	200.7	04-21-93	ELZ
ARSENIC	MG/L	< 0.01	206.2	04-20-93	GRS
BARIUM	MG/L	0.017	200.7	04-21-93	ELZ
BERYLLIUM	MG/L	< 0.005	200.7	04-21-93	ELZ
CADMIUM	MG/L	< 0.005	200.7	04-21-93	ELZ
CALCIUM	MG/L	36.2	200.7	04-21-93	ELZ
CHROMIUM	MG/L	< 0.010	200.7	04-21-93	ELZ
COBALT	MG/L	< 0.010	200.7	04-21-93	ELZ
COPPER	MG/L	0.012	200.7	04-21-93	ELZ
IRON	MG/L	0.216	200.7	04-21-93	ELZ
LEAD	MG/L	< 0.005	239.2	04-20-93	GRS
MAGNESIUM	MG/L	11.7	200.7	04-21-93	ELZ
MANGANESE	MG/L	0.027	200.7	04-21-93	ELZ
MERCURY	MG/L	< 0.0002	245.2	04-19-93	DAB

Report Approved by: Jim A. McQuellan
Project Manager

Environmental Science & Engineering, Inc.
8901 North Industrial Road Peoria, IL 61615-1589
Phone (309) 692-4422 Lab Fax (309) 692-5232

An IEPA Contract Laboratory

TO: METCALF & EDDY
1 PIERCE PLACE, SUITE 1400 W.
ITASCA, IL 60143
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PAGE NUMBER: 10
REPORT DATE: 05-04-93
DATE RECEIVED: 04-16-93
PROJECT NUMBER: 592-5841
P.O. NUMBER: 010487-2000-100

CLIENT PROJECT NAME: COMMONWEALTH EDISON

ESE SAMPLE 11995*1
SAMPLE DATE 04/15/93

DESCRIPTION	UNITS	MUNICIPAL W. WATER	METHOD NO.	DATE ANALYZED	ANALYST
METALS (Cont'd)					
NICKEL	MG/L	< 0.020	200.7	04-21-93	ELZ
POTASSIUM	MG/L	1.46	200.7	04-21-93	ELZ
SELENIUM	MG/L	< 0.005	270.2	04-20-93	GRS
SILVER	MG/L	< 0.010	200.7	04-21-93	ELZ
SODIUM	MG/L	8.01	200.7	04-21-93	ELZ
THALLIUM	MG/L	< 0.01	279.2	04-20-93	GRS
VANADIUM	MG/L	< 0.010	200.7	04-21-93	ELZ
ZINC	MG/L	0.204	200.7	04-21-93	ELZ

Report Approved by: Jim T. McQuellen
Project Manager

MWG13-15_47212

...ing, Inc.

8901 North Industrial Road -- Peoria, Illinois 61615
Telephone: (309) 692-4422 -- Fax: (309) 692-5232

FOR LAB USE ONLY
Project Number: 592 - 5841
Due Date: 4 - 29 - 93

Chain of Custody Record

№ 3109

Company: METCALF & EDDY INC
Address: [illegible]
ITASCA, IL 60143

Phone #: [illegible] Fax #: [illegible]
P.O. #: [illegible]
Client Contact: [illegible]
Project # / Location: [illegible]

Sample Type: 1 Water 2 Soil 3 Sludge 4 Oil 5 Tissue Other
Container Type: P - Plastic G - Glass V - VOC
Preservative: 1 None 2 H2SO4 3 HNO3 4 NaOH

Analyses: TCL VOLATILES, TCL SEMI-VOLATILES, TCL PEST/PCBS, TAL METALS, CN

Sample I D (10 Characters ONLY)	Sample Type	Container Size	Container Type	Container No	Sampling Date	Sampling Time	Preservative	Lab I D	TCL VOLATILES	TCL SEMI-VOLATILES	TCL PEST/PCBS	TAL METALS	CN	Comments
[illegible]	1	40ml	G	5	4/15/93	[illegible]	HCL	11995-1	X					[illegible]
"	1	½ Gal	G	1	4/15/93	[illegible]	1			X				
"	1	½ Gal	G	1	4/15/93	[illegible]	1				X			
"	1	500ml	P	1	4/15/93	[illegible]	3					X		
"	1	[illegible]	P	1	4/15/93	[illegible]	4	↓					X	
TRIP BLANK	1	[illegible]	G	5	4/15/93	—	HCL	-2	X					[illegible]

Relinquished By: [signature] Date: 4-15-93 Time: 4:20
Received By: Date: Time:
Relinquished By: Date: Time:
Received For Lab By: [signature] Date: 4-16-93 Time: 5:35

TURNAROUND TIME: ☐ RUSH: ___ day turnaround ☒ ROUTINE

FOR LAB USE ONLY
Samples Received Chilled ☒ Yes ☐ No

SPECIAL INSTRUCTIONS:

Copies: White - Client, Canary - Lab Receiving, Pink - Lab File, Goldenrod - Retained by Sampler

MWG13-15_47213

ESI Environmental Science & Engineering, Inc.
8901 North Industrial Road, Peoria, IL 61615-1509
Phone (309) 692-4422 Lab Fax (309) 692-5232
An IEPA Con .aboratory

Environmental Science and Engineering, Inc.
Table of Definitions for QC Reports
Columnar Terms

Item	Title	Definition
FOUND	Sample Concentration	SPIKE SAMPLE CONC - LESS THE UNSPIKED SAMPLE CONC.
FOUND #1	Concentration of UNSPIKED Sample	
FOUND #2	Concentration of Replicate Sample	
%RECV	Percent Recovery:	100*(FOUND/TARGET) displayed in appropriate significant figures.
RECV CRIT	Recovery Criteria	Criteria for Percent Recovery set in the parameter record.
UNSPIKED	Unspiked Sample Concentration	Concentration of the DA or UN sample.
M*BLK	Concentration of Method Blank	
R.P.D.	Relative Percent Difference (Matrix Spikes)	100*(ABS (%RECV SPMn - %RECV SPMn-1)/(%RECV SPMn + %RECV SPMn-1)/2).
R.P.D.	Replicate Percent Difference (Control Spikes)	100*(ABS (%RECV SPn - %RECV SP1)/(%RECV SPn + %RECV SP1)/2).
R.P.D.	Replicate Percent Difference (Replicate Samples)	100*(ABS (Conc Rep #2 - Conc Rep #1)/(Conc Rep #2 + Conc Rep #1)/2).
I REPL DIFF	Maximum value of Replicate Difference	
C.D.L.	Calibration Curve Detection Limit	
NA	Not Analyzed	
N/A	Not Available	
UNSPIKED = 0		If the parameter is reported as a "LESS THAN", the data is converted to 0 for calculation purposes.
MIN.REC	Minimum Recovery Limit	Average Recovery - Recovery Limit.
MAX.REC	Maximum Recovery Limit	Average Recovery + Recovery Limit.
DA		Refers to sample.
UN		Refers to second analysis of sample for QC purposes.
SP		Spike of reagent (blank) water or soil.
SPM1,SPM2		Duplicate Matrix Spikes of a sample.
SPM		Matrix Spike of a sample.
MB		Refers to Method Blank.

METCALF & EDDY 11995
Method Blank (MB) Sample Summary

NAME	UNITS	STOR*METH	BATCH	SAMPLE	DATE	FOUND
CHLOROMETHANE	UG/L	34418*PBH	P12753	MB*NONE*1	04/27/93	<2
BROMOMETHANE	UG/L	34413*PBH		MB*NONE*1		<2
VINYL CHLORIDE	UG/L	39175*PBH		MB*NONE*1		<0.5
CHLOROETHANE	UG/L	34311*PBH		MB*NONE*1		<2
METHYLENE CHLORIDE	UG/L	34423*PBH		MB*NONE*1		1
ACETONE	UG/L	97020*PBH		MB*NONE*1		5
CARBON DISULFIDE	UG/L	77041*PBH		MB*NONE*1		<2
1,1-DICHLOROETHENE	UG/L	34501*PBH		MB*NONE*1		<0.5
1,1-DICHLOROETHANE	UG/L	34496*PBH		MB*NONE*1		<1
TRANS-1,2-DICHLOROETHENE	UG/L	34549*PBH		MB*NONE*1		<1
CHLOROFORM	UG/L	32106*PBH		MB*NONE*1		<1
1,2-DICHLOROETHANE	UG/L	34531*PBH		MB*NONE*1		<0.5
2-BUTANONE	UG/L	75078*PBH		MB*NONE*1		<2
1,1,1-TRICHLOROETHANE	UG/L	34506*PBH		MB*NONE*1		<0.5
CARBON TETRACHLORIDE	UG/L	32102*PBH		MB*NONE*1		<0.5
VINYL ACETATE	UG/L	77057*PBH		MB*NONE*1		<2
BROMODICHLOROMETHANE	UG/L	32101*PBH		MB*NONE*1		<1
1,2-DICHLOROPROPANE	UG/L	34541*PBH		MB*NONE*1		<1
CIS-1,3-DICHLOROPROPENE	UG/L	34704*PBH		MB*NONE*1		<1
TRICHLOROETHENE	UG/L	39180*PBH		MB*NONE*1		<0.5
DIBROMOCHLOROMETHANE	UG/L	32105*PBH		MB*NONE*1		<1
1,1,2-TRICHLOROETHANE	UG/L	34511*PBH		MB*NONE*1		<1
BENZENE	UG/L	34030*PBH		MB*NONE*1		<0.5
TRANS-1,3-DICHLOROPROPENE	UG/L	34699*PBH		MB*NONE*1		<1
BROMOFORM	UG/L	32104*PBH		MB*NONE*1		<1
4-METHYL-2-PENTANONE	UG/L	98694*PBH		MB*NONE*1		<2
2-HEXANONE	UG/L	77103*PBH		MB*NONE*1		<2
TETRACHLOROETHENE	UG/L	34475*PBH		MB*NONE*1		<1
1,1,2,2-TETRACHLOROETHANE	UG/L	34516*PBH		MB*NONE*1		<1
TOLUENE	UG/L	34010*PBH		MB*NONE*1		<1
CHLOROBENZENE	UG/L	34301*PBH		MB*NONE*1		<1
ETHYLBENZENE	UG/L	34371*PBH		MB*NONE*1		<1
STYRENE	UG/L	99210*PBH		MB*NONE*1		<1
XYLENES,TOTAL	UG/L	81551*PBH		MB*NONE*1		<2
CIS-1,2-DICHLOROETHENE	UG/L	77093*PBH		MB*NONE*1		<1
BIS(2-CHLOROETHYL) ETHER	UG/L	34273*PAH	P12700	MB*NONE*1	04/26/93	<10
1,3-DICHLOROBENZENE	UG/L	34566*PAH		MB*NONE*1		<10
1,4-DICHLOROBENZENE	UG/L	34571*PAH		MB*NONE*1		<10
BENZYL ALCOHOL	UG/L	77147*PAH		MB*NONE*1		<10
1,2-DICHLOROBENZENE	UG/L	34536*PAH		MB*NONE*1		<10
BIS(2-CHLOROISOPROPYL) ETHER	UG/L	34283*PAH		MB*NONE*1		<10
N-NITROSODI-N-PROPYLAMINE	UG/L	34428*PAH		MB*NONE*1		<10
HEXACHLOROETHANE	UG/L	34396*PAH		MB*NONE*1		<10
NITROBENZENE	UG/L	34447*PAH		MB*NONE*1		<10
ISOPHORONE	UG/L	34408*PAH		MB*NONE*1		<10
BIS(2-CHLOROETHOXY) METHANE	UG/L	34278*PAH		MB*NONE*1		<10
1,2,4-TRICHLOROBENZENE	UG/L	34551*PAH		MB*NONE*1		<10
NAPHTHALENE	UG/L	34696*PAH		MB*NONE*1		<10
4-CHLOROANILINE	UG/L	99075*PAH		MB*NONE*1		<10
HEXACHLOROBUTADIENE	UG/L	34391*PAH		MB*NONE*1		<10
2-METHYLNAPHTHALENE	UG/L	77416*PAH		MB*NONE*1		<10
HEXACHLOROCYCLOPENTADIENE	UG/L	34386*PAH		MB*NONE*1		<10
2-CHLORONAPHTHALENE	UG/L	34581*PAH		MB*NONE*1		<10

METCALF & EDDY 11995
Method Blank (MB) Sample Summary

NAME	UNITS	STOR*METH	BATCH	SAMPLE	DATE	FOUND
2-NITROANILINE	UG/L	99077*PAN	P12700	MB*NONE*1	04/26/93	<50
DIMETHYL PHTHALATE	UG/L	34341*PAN		MB*NONE*1		<10
ACENAPHTHYLENE	UG/L	34200*PAN		MB*NONE*1		<10
2,6-DINITROTOLUENE	UG/L	34626*PAN		MB*NONE*1		<10
3-NITROANILINE	UG/L	99078*PAN		MB*NONE*1		<50
ACENAPHTHENE	UG/L	34205*PAN		MB*NONE*1		<10
DIBENZOFURAN	UG/L	81302*PAN		MB*NONE*1		<10
2,4-DINITROTOLUENE	UG/L	34611*PAN		MB*NONE*1		<10
DIETHYL PHTHALATE	UG/L	34336*PAN		MB*NONE*1		<10
4-CHLOROPHENYLPHENYL ETHER	UG/L	34641*PAN		MB*NONE*1		<10
FLUORENE	UG/L	34381*PAN		MB*NONE*1		<10
4-NITROANILINE	UG/L	99079*PAN		MB*NONE*1		<50
N-NITROSODIPHENYLAMINE	UG/L	34433*PAN		MB*NONE*1		<10
4-BROMOPHENYLPHENYL ETHER	UG/L	34636*PAN		MB*NONE*1		<10
HEXACHLOROBENZENE	UG/L	39700*PAN		MB*NONE*1		<10
PHENANTHRENE	UG/L	34461*PAN		MB*NONE*1		<10
ANTHRACENE	UG/L	34220*PAN		MB*NONE*1		<10
DI-N-BUTYL PHTHALATE	UG/L	39110*PAN		MB*NONE*1		<10
FLUORANTHENE	UG/L	34376*PAN		MB*NONE*1		<10
PYRENE	UG/L	34469*PAN		MB*NONE*1		<10
BUTYL BENZYL PHTHALATE	UG/L	34292*PAN		MB*NONE*1		<10
3,3'-DICHLOROBENZIDINE	UG/L	34631*PAN		MB*NONE*1		<20
BENZO(A)ANTHRACENE	UG/L	34526*PAN		MB*NONE*1		<10
YSENE	UG/L	34320*PAN		MB*NONE*1		<10
(2-ETHYLHEXYL) PHTHALATE	UG/L	39100*PAN		MB*NONE*1		<10
-I-OCTYL PHTHALATE	UG/L	34596*PAN		MB*NONE*1		<10
BENZO(B)FLUORANTHENE	UG/L	34230*PAN		MB*NONE*1		<10
BENZO(K)FLUORANTHENE	UG/L	34242*PAN		MB*NONE*1		<10
BENZO(A)PYRENE	UG/L	34247*PAN		MB*NONE*1		<10
INDENO(1,2,3-CD)PYRENE	UG/L	34403*PAN		MB*NONE*1		<10
DIBENZO(A,H)ANTHRACENE	UG/L	34556*PAN		MB*NONE*1		<10
BENZO(GHI)PERYLENE	UG/L	34521*PAN		MB*NONE*1		<10
PHENOL	UG/L	34694*PAN		MB*NONE*1		<10
2-CHLOROPHENOL	UG/L	34586*PAN		MB*NONE*1		<10
2-METHYL PHENOL	UG/L	99073*PAN		MB*NONE*1		<10
4-METHYL PHENOL	UG/L	99074*PAN		MB*NONE*1		<10
2-NITROPHENOL	UG/L	34591*PAN		MB*NONE*1		<10
2,4-DIMETHYLPHENOL	UG/L	34606*PAN		MB*NONE*1		<10
BENZOIC ACID	UG/L	77247*PAN		MB*NONE*1		<50
2,4-DICHLOROPHENOL	UG/L	34601*PAN		MB*NONE*1		<10
4-CHLORO-3-METHYL PHENOL	UG/L	34452*PAN		MB*NONE*1		<10
2,4,6-TRICHLOROPHENOL	UG/L	34621*PAN		MB*NONE*1		<10
2,4,5-TRICHLOROPHENOL	UG/L	77687*PAN		MB*NONE*1		<10
2,4-DINITROPHENOL	UG/L	34616*PAN		MB*NONE*1		<50
4-NITROPHENOL	UG/L	34646*PAN		MB*NONE*1		<50
2-METHYL-4,6-DINITROPHENOL	UG/L	34657*PAN		MB*NONE*1		<50
PENTACHLOROPHENOL	UG/L	39032*PAN		MB*NONE*1		<50
BHC,ALPHA	UG/L	39337*PCN	P12915	MB*NONE*1	05/04/93	<0.05
BHC,BETA	UG/L	39338*PCN		MB*NONE*1		<0.05
BHC,DELTA	UG/L	34259*PCN		MB*NONE*1		<0.05
BHC,GAMMA(LINDANE)	UG/L	39340*PCN		MB*NONE*1		<0.05
HEPTACHLOR	UG/L	39410*PCN		MB*NONE*1		<0.05
ALDRIN	UG/L	39330*PCN		MB*NONE*1		<0.05

MWG13-15_47216

METCALF & EDDY 11995

Method Blank (MB) Sample Summary

NAME	UNITS	STOR*METH	BATCH	SAMPLE	DATE	FOUND
HEPTACHLOR EPOXIDE	UG/L	39420*PCH	P12915	MB*NONE*1	05/04/93	<0.05
ENDOSULFAN I	UG/L	34361*PCH		MB*NONE*1		<0.05
DIELDRIN	UG/L	39380*PCH		MB*NONE*1		<0.10
4,4'-DDE	UG/L	99911*PCH		MB*NONE*1		<0.10
ENDRIN	UG/L	39390*PCH		MB*NONE*1		<0.10
ENDOSULFAN II	UG/L	34356*PCH		MB*NONE*1		<0.10
4,4'-DDD	UG/L	99913*PCH		MB*NONE*1		<0.10
ENDOSULFAN SULFATE	UG/L	34351*PCH		MB*NONE*1		<0.10
4,4'-DDT	UG/L	99909*PCH		MB*NONE*1		<0.10
METHOXYCHLOR	UG/L	39480*PCH		MB*NONE*1		<0.50
ENDRIN KETONE	UG/L	78008*PCH		MB*NONE*1		<0.10
ALPHA-CHLORDANE	UG/L	39350*PCH		MB*NONE*1		<0.05
GAMMA-CHLORDANE	UG/L	39351*PCH		MB*NONE*1		<0.05
TOXAPHENE	UG/L	39400*PCH		MB*NONE*1		<5.0
AROCLOR-1016	UG/L	34671*PCH		MB*NONE*1		<1.0
AROCLOR-1221	UG/L	39488*PCH		MB*NONE*1		<2.0
AROCLOR-1232	UG/L	39492*PCH		MB*NONE*1		<1.0
AROCLOR-1242	UG/L	39496*PCH		MB*NONE*1		<1.0
AROCLOR-1248	UG/L	39500*PCH		MB*NONE*1		<1.0
AROCLOR-1254	UG/L	39504*PCH		MB*NONE*1		<1.0
AROCLOR-1260	UG/L	39508*PCH		MB*NONE*1		<1.0
ALUMINUM	MG/L	1105*PJH	P12601	MB*NONE*1	04/21/93	<0.050
ANTIMONY	MG/L	1097*PJH		MB*NONE*1		<0.050
ARSENIC	MG/L	1002*PHH	P12633	MB*WATER*1	04/20/93	<0.01
BARIUM	MG/L	1007*PJH	P12601	MB*NONE*1	04/21/93	<0.010
BERYLLIUM	MG/L	1012*PJH		MB*NONE*1		<0.005
CADMIUM	MG/L	1027*PJH		MB*NONE*1		<0.005
CALCIUM	MG/L	916*PJH		MB*NONE*1		<0.500
CHROMIUM	MG/L	1034*PJH		MB*NONE*1		<0.010
COBALT	MG/L	1037*PJH		MB*NONE*1		<0.010
COPPER	MG/L	1042*PJH		MB*NONE*1		<0.010
IRON	MG/L	1018*PJH		MB*NONE*1		<0.010
LEAD	MG/L	1051*PHH	P12633	MB*WATER*1	04/20/93	<0.005
MAGNESIUM	MG/L	927*PJH	P12601	MB*NONE*1	04/21/93	<0.500
MANGANESE	MG/L	1055*PJH		MB*NONE*1		<0.010
MERCURY	MG/L	71900*PKH	P12539	MB*NONE*1	04/19/93	<0.0002
NICKEL	MG/L	1067*PJH	P12601	MB*NONE*1	04/21/93	<0.020
POTASSIUM	MG/L	937*PJH		MB*NONE*1		<0.500
SELENIUM	MG/L	1147*PHH	P12633	MB*WATER*1	04/20/93	<0.005
SILVER	MG/L	1077*PJH	P12601	MB*NONE*1	04/21/93	<0.010
SODIUM	MG/L	929*PJH		MB*NONE*1		<0.500
THALLIUM	MG/L	1059*PHH	P12633	MB*WATER*1	04/20/93	<0.01
VANADIUM	MG/L	1087*PJH	P12601	MB*NONE*1	04/21/93	<0.010
ZINC	MG/L	1092*PJH		MB*NONE*1		<0.010

METCALF & EDDY 11995
Replicate Analysis (RP) Sample Summary

NAME	UNITS	STOR*METH	BATCH	SAMPLE	DATE	FOUND #1	FOUND #2	R.P.D.	MAX % REPL DIFF
ALUMINUM	MG/L	1105*PJH	P12601	RP*11995*1	04/21/93	0.085	<0.050	51.9	20 2.
ANTIMONY	MG/L	1097*PJH		RP*11995*1		<0.050	<0.050	0.0	20
ARSENIC	MG/L	1002*PHH	P12633	RP*11995*1	04/20/93	<0.01	<0.01	0.0	20
BARIUM	MG/L	1007*PJH	P12601	RP*11995*1	04/21/93	0.017	0.018	5.7	20
BERYLLIUM	MG/L	1012*PJH		RP*11995*1		<0.005	<0.005	0.0	20
CADMIUM	MG/L	1027*PJH		RP*11995*1		<0.005	<0.005	0.0	20
CALCIUM	MG/L	916*PJH		RP*11995*1		34.2	37.7	4.1	20
CHROMIUM	MG/L	1034*PJH		RP*11995*1		<0.010	<0.010	0.0	20
COBALT	MG/L	1037*PJH		RP*11995*1		<0.010	<0.010	0.0	20
COPPER	MG/L	1042*PJH		RP*11995*1		0.012	<0.010	18.2	20
IRON	MG/L	1018*PJH		RP*11995*1		0.216	0.791	114.2	20 2.
LEAD	MG/L	1051*PHH	P12633	RP*11995*1	04/20/93	<0.005	<0.005	0.0	20
MAGNESIUM	MG/L	927*PJH	P12601	RP*11995*1	04/21/93	11.7	12.2	4.2	20
MANGANESE	MG/L	1055*PJH		RP*11995*1		0.027	0.027	0.0	20
MERCURY	MG/L	71900*PKH	P12539	RP*11995*1	04/19/93	<0.0002	<0.0002	0.0	20
NICKEL	MG/L	1067*PJH	P12601	RP*11995*1	04/21/93	<0.020	<0.020	0.0	20
POTASSIUM	MG/L	937*PJH		RP*11995*1		1.46	1.53	4.7	20
SELENIUM	MG/L	1147*PHH	P12633	RP*11995*1	04/20/93	<0.005	<0.005	0.0	20
SILVER	MG/L	1077*PJH	P12601	RP*11995*1	04/21/93	<0.010	<0.010	0.0	20
SODIUM	MG/L	929*PJH		RP*11995*1		8.01	8.37	4.4	20
THALLIUM	MG/L	1059*PHH	P12633	RP*11995*1	04/20/93	<0.01	<0.01	0.0	20
VANADIUM	MG/L	1087*PJH	P12601	RP*11995*1	04/21/93	<0.010	<0.010	0.0	20
ZINC	MG/L	1092*PJH		RP*11995*1		0.204	0.168	19.4	20
	UNITS	403*PD	P12575	RP*12050*1	04/20/93	6.65	6.69	0.6	20

ample amount less than 5 x CRDL.

METCALF & EDDY 11995
Standard Matrix Spike (SP) Recovery and Replicate Summary

NAME	UNITS	STOR*METH	BATCH	SAMPLE	DATE	TARGET	FOUND	%RECV	RECV CRIT	R.P.D.	R.P.D. CRIT.
BHC,GAMMA(LINDANE)	UG/L	39340*PCH	P12915	SP1*NONE*1	05/04/93	0.50	0.48	96.0	56-123		20
BHC,GAMMA(LINDANE)	UG/L			SP2*NONE*1		0.50	0.47	94 0	56-123	2.1	20
HEPTACHLOR	UG/L	39410*PCH		SP1*NONE*1		0.50	0.44	88.0	40-131		20
HEPTACHLOR	UG/L			SP2*NONE*1		0.50	0.40	80.0	40-131	9.5	20
ALDRIN	UG/L	39330*PCH		SP1*NONE*1		0.50	0.49	98.0	40-120		20
ALDRIN	UG/L			SP2*NONE*1		0.50	0.44	88.0	40-120	11.0	20
DIELDRIN	UG/L	39380*PCH		SP1*NONE*1		1.0	0.96	96.0	52-126		20
DIELDRIN	UG/L			SP2*NONE*1		1.0	0.92	92.0	52-126	4.3	20
ENDRIN	UG/L	39390*PCH		SP1*NONE*1		1.0	1.1	110.0	56-121		20
ENDRIN	UG/L			SP2*NONE*1		1.0	1.0	100.0	56-121	9.5	20
4,4'-DDT	UG/L	99909*PCH		SP1*NONE*1		1.0	0.99	99.0	38-127		20
4,4'-DDT	UG/L			SP2*NONE*1		1.0	0.09	9.0	38-127	170.0	20 3.

3. No corrective action required by CLP.

METCALF & EDDY 11995

Sample Matrix Spike (SPM) Recovery Summary

NAME	UNITS	STOR*METH	BATCH	SAMPLE	DATE	TARGET	FOUND	%RECV	RECV CRIT	UNSPIKED	R.P.D.	R.P.D. CRIT.	
1,1-DICHLOROETHENE	UG/L	34501*PBH	P12753	SPM1*11995*1	04/27/93	10	10	100	61-145	0.0		14	
1,1-DICHLOROETHENE	UG/L			SPM2*11995*1		10	11	110	61-145	0.0	10.0	14	
TRICHLOROETHENE	UG/L	39180*PBH		SPM1*11995*1		10	11	110	71-120	0.0		14	
TRICHLOROETHENE	UG/L			SPM2*11995*1		10	12	120	71-120	0.0	9.0	14	
BENZENE	UG/L	34030*PBH		SPM1*11995*1		10	11	110	76-127	0.0		11	
BENZENE	UG/L			SPM2*11995*1		10	11	110	76-127	0.0	0.0	11	
TOLUENE	UG/L	34010*PBH		SPM1*11995*1		10	11	110	76-125	0.0		13	
TOLUENE	UG/L			SPM2*11995*1		10	11	110	76-125	0.0	0.0	13	
CHLOROBENZENE	UG/L	34301*PBH		SPM1*11995*1		10	12	120	75-130	0.0		13	
CHLOROBENZENE	UG/L			SPM2*11995*1		10	13	130	75-130	0.0	8.0	13	
ALUMINUM	MG/L	1105*PJH	P12601	SPM*11995*1	04/21/93	1.00	0.955	95.5	75-125	0.085		20	
ANTIMONY	MG/L	1097*PJH		SPM*11995*1		1.00	0.906	90.6	75-125	0.0		20	
ARSENIC	MG/L	1002*PHH	P12633	SPM*11995*1	04/20/93	0.04	0.04	99.8	75-125	0.00008		20	
BARIUM	MG/L	1007*PJH	P12601	SPM*11995*1	04/21/93	1.00	0.977	97.7	75-125	0.017		20	
BERYLLIUM	MG/L	1012*PJH		SPM*11995*1		1.00	0.975	97.5	75-125	0.0		20	
CADMIUM	MG/L	1027*PJH		SPM*11995*1		1.00	1.01	101	75-125	0.0		20	
CALCIUM	MG/L	916*PJH		SPM*11995*1		1.00	2.60	260	75-125	36.2		20	1.
CHROMIUM	MG/L	1034*PJH		SPM*11995*1		1.00	0.999	99.9	75-125	0.001		20	
COBALT	MG/L	1037*PJH		SPM*11995*1		1.00	0.996	99.6	75-125	0.0		20	
COPPER	MG/L	1042*PJH		SPM*11995*1		1.00	0.978	97.8	75-125	0.012		20	
IRON	MG/L	1018*PJH		SPM*11995*1		1.00	0.814	81.4	75-125	0.216		20	
LEAD	MG/L	1051*PHH	P12633	SPM*11995*1	04/20/93	0.04	0.04	99.5	75-125	0.0002		20	
MAGNESIUM	MG/L	927*PJH	P12601	SPM*11995*1	04/21/93	1.00	1.60	160	75-125	11.7		20	
MANGANESE	MG/L	1055*PJH		SPM*11995*1		1.00	0.993	99.3	75-125	0.027		20	
MERCURY	MG/L	71900*PKH	P12539	SPM*11995*1	04/19/93	0.0010	0.0011	109	75-125	0.00001		20	
NICKEL	MG/L	1067*PJH	P12601	SPM*11995*1	04/21/93	1.00	0.998	99.8	75-125	0.0		20	
POTASSIUM	MG/L	937*PJH		SPM*11995*1		10.00	9.94	99.4	75-125	1.46		20	
SELENIUM	MG/L	1147*PHH	P12633	SPM*11995*1	04/20/93	0.04	0.03	77.5	75-125	0.001		20	
SILVER	MG/L	1077*PJH	P12601	SPM*11995*1	04/21/93	1.00	0.978	97.8	75-125	0.0		20	
SODIUM	MG/L	929*PJH		SPM*11995*1		1.00	1.38	138	75-125	0.01		20	
THALLIUM	MG/L	1059*PHH	P12633	SPM*11995*1	04/20/93	0.04	0.04	98.0	75-125	0.0008		20	
VANADIUM	MG/L	1087*PJH	P12601	SPM*11995*1	04/21/93	1.00	0.996	99.6	75-125	0.0		20	
ZINC	MG/L	1092*PJH		SPM*11995*1		1.00	0.956	95.6	75-125	0.204		20	

1. Sample amount greater than 4 times spike amount.

METCALF & EDDY 11995

Surrogate (SUR) Spike Recovery Summary

NAME	UNITS	STOR*METH	BATCH	SAMPLE	DATE	TARGET	FOUND	%RECV	RECV CRIT
TOLUENE-D(8)	UG/L	98810*SUR	P12753	MB*NONE*1	04/27/93	10.0	10.0	100.0	81-117
TOLUENE-D(8)	UG/L			DA*11995*1		10.0	9.7	97.0	81-117
TOLUENE-D(8)	UG/L			DA*11995*2		10.0	11	110.0	81-117
TOLUENE-D(8)	UG/L			SPM1*11995*1		10.0	10.0	100.0	81-117
TOLUENE-D(8)	UG/L			SPM2*11995*1		10.0	10.0	100.0	81-117
BROMOFLUOROBENZENE	UG/L	98402*SUR		MB*NONE*1		10.0	9.3	93.0	74-121
BROMOFLUOROBENZENE	UG/L			DA*11995*1		10.0	8.8	88.0	74-121
BROMOFLUOROBENZENE	UG/L			DA*11995*2		10.0	8.6	86.0	74-121
BROMOFLUOROBENZENE	UG/L			SPM1*11995*1		10.0	8.9	89.0	74-121
BROMOFLUOROBENZENE	UG/L			SPM2*11995*1		10.0	8.7	87.0	74-121
1,2-DICHLOROETHANE-D4	UG/L	98812*SUR		MB*NONE*1		10.0	9.0	90.0	70-121
1,2-DICHLOROETHANE-D4	UG/L			DA*11995*1		10.0	9.6	96.0	70-121
1,2-DICHLOROETHANE-D4	UG/L			DA*11995*2		10.0	8.8	88.0	70-121
1,2-DICHLOROETHANE-D4	UG/L			SPM1*11995*1		10.0	12	120.0	70-121
1,2-DICHLOROETHANE-D4	UG/L			SPM2*11995*1		10.0	10.0	100.0	70-121
NITROBENZENE-D5	UG/L	91012*SUR	P12700	MB*NONE*1	04/26/93	50	36	72.0	35-114
NITROBENZENE-D5	UG/L			DA*11995*1		50	38	76.0	35-114
2-FLUOROBIPHENYL	UG/L	98330*SUR		MB*NONE*1		50	34	68.0	43-116
2-FLUOROBIPHENYL	UG/L			DA*11995*1		50	37	74.0	43-116
TERPHENYL-D14	UG/L	97449*SUR		MB*NONE*1		50	43	86.0	33-141
TERPHENYL-D14	UG/L			DA*11995*1		50	42	84.0	33-141
PHENOL-D5	UG/L	98395*SUR		MB*NONE*1		75	58	77.3	10-110
PHENOL-D5	UG/L			DA*11995*1		75	57	76.0	10-110
IOPHENOL	UG/L	97024*SUR		MB*NONE*1		75	48	64.0	21-110
IOPHENOL	UG/L			DA*11995*1		75	48	64.0	21-110
TRIBROMOPHENOL	UG/L	91020*SUR		MB*NONE*1		75	60	80.0	10-123
2,-,6-TRIBROMOPHENOL	UG/L			DA*11995*1		75	67	89.3	10-123
2-CHLOROPHENOL-D4	UG/L	98755*SUR		MB*NONE*1		75	66	88.0	33-110
2-CHLOROPHENOL-D4	UG/L			DA*11995*1		75	68	90.7	33-110
1,2-DICHLOROBENZENE-D4	UG/L	21996911*SUR		MB*NONE*1		50	29	58.0	16-110
1,2-DICHLOROBENZENE-D4	UG/L			DA*11995*1		50	32	64.0	16-110

METCALF & EDDY 11995

Laboratory Control Sample (LCS) Summary

NAME	UNITS	STOR*METH	BATCH	SAMPLE	DATE	TARGET	FOUND	%RECV	RECV CRIT	M*BLK
ALUMINUM	MG/L	1105*PJM	P12601	LCS*NONE*1	04/21/93	1.00	1.11	111.0	75-125	
ANTIMONY	MG/L	1097*PJM		LCS*NONE*1		1.00	0.920	92.0	75-125	
ARSENIC	MG/L	1002*PMM	P12633	LCS*WATER*1	04/20/93	0.04	0.04	100.0	75-125	
BARIUM	MG/L	1007*PJM	P12601	LCS*NONE*1	04/21/93	1.00	0.974	97.4	75-125	
BERYLLIUM	MG/L	1012*PJM		LCS*NONE*1		1.00	0.976	97.6	75-125	
CADMIUM	MG/L	1027*PJM		LCS*NONE*1		1.00	1.03	103.0	75-125	
CALCIUM	MG/L	916*PJM		LCS*NONE*1		1.00	1.18	118.0	75-125	
CHROMIUM	MG/L	1034*PJM		LCS*NONE*1		1.00	1.01	101.0	75-125	
COBALT	MG/L	1037*PJM		LCS*NONE*1		1.00	1.01	101.0	75-125	
COPPER	MG/L	1042*PJM		LCS*NONE*1		1.00	0.993	99.3	75-125	
IRON	MG/L	1018*PJM		LCS*NONE*1		1.00	1.01	101.0	75-125	
LEAD	MG/L	1051*PMM	P12633	LCS*WATER*1	04/20/93	0.04	0.042	120.0	75-125	
MAGNESIUM	MG/L	927*PJM	P12601	LCS*NONE*1	04/21/93	1.00	1.14	114.0	75-125	
MANGANESE	MG/L	1055*PJM		LCS*NONE*1		1.00	1.01	101.0	75-125	
NICKEL	MG/L	1067*PJM		LCS*NONE*1		1.00	1.01	101.0	75-125	
POTASSIUM	MG/L	937*PJM		LCS*NONE*1		10.00	9.60	96.0	75-125	
SELENIUM	MG/L	1147*PMM	P12633	LCS*WATER*1	04/20/93	0.04	0.04	100.0	75-125	
SILVER	MG/L	1077*PJM	P12601	LCS*NONE*1	04/21/93	1.00	0.985	98.5	75-125	
SODIUM	MG/L	929*PJM		LCS*NONE*1		1.00	0.959	95.9	75-125	
THALLIUM	MG/L	1059*PMM	P12633	LCS*WATER*1	04/20/93	0.02	0.02	100.0	75-125	
VANADIUM	MG/L	1087*PJM	P12601	LCS*NONE*1	04/21/93	1.00	1.00	100.0	75-125	
ZINC	MG/L	1092*PJM		LCS*NONE*1		1.00	0.996	99.6	75-125	
PH--	UNITS	403*PD	P12575	LCS*NONE*1	04/20/93	7.00	7.05	100.7	75-125	

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-1	MW-1D	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	Cistern	Illinois Class I Standards	
VOLATILE ORGANICS											
CHLOROMETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
BROMOMETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
VINYL CHLORIDE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	2	
CHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
METHYLENE CHLORIDE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
ACETONE	11	8J	11	8J	< 10	< 10	5J	< 10	16	--	
CARBON DISULFIDE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
1,1-DICHLOROETHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	7	
1,1-DICHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
TRANS-1,2-DICHLOROETHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	100	
CHLOROFORM	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
1,2-DICHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	5	
2-BUTANONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
1,1,1-TRICHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	200	
CARBON TETRACHLORIDE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	5	
BROMODICHLOROMETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
1,2-DICHLOROPROPANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	5	
CIS-1,3-DICHLOROPROPENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
TRICHLOROETHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	5	
DIBROMOCHLOROMETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
1,1,2-TRICHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
BENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	5	
TRANS-1,3-DICHLOROPROPENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
BROMOFORM	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
4-METHYL-2-PENTANONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
2-HEXANONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
TETRACHLOROETHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	5	
1,1,2,2-TETRACHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	--	
TOLUENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	1000	
CHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	100	
ETHYLBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	700	
STYRENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	100	
XYLENES (TOTAL)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10000	
CIS-1,2-DICHLOROETHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	70	

ALL UNITS UG/L
J - INDICATES ESTIMATED VALUE
NOTE: IN CERTAIN INSTANCES, THE REPORTED PQL IS HIGHER THAN THE CLASS I STANDARD. WHEN THIS OCCURS, ANY VALUES ABOVE THE REPORTED PQL WILL BE CONSIDERED EXCEEDANCES OF THE CLASS I STANDARD.

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	FB-GW	FB-1	FB-2	FB-3	FB-4	TBLK-GW	TBLK-A	TBLK-B	TBLK-C	TBLK-D	TBLK-E
VOLATILE ORGANICS											
CHLOROMETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
BROMOMETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VINYL CHLORIDE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
METHYLENE CHLORIDE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
ACETONE	< 10	8BJ	6BJ	8BJ	8BJ	< 10	11	< 10	< 10	< 10	8J
CARBON DISULFIDE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	8J
1,1-DICHLOROETHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,1-DICHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TRANS-1,2-DICHLOROETHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CHLOROFORM	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,2-DICHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
2-BUTANONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,1,1-TRICHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CARBON TETRACHLORIDE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
BROMODICHLOROMETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,2-DICHLOROPROPANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CIS-1,3-DICHLOROPROPENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TRICHLOROETHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
DIBROMOCHLOROMETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,1,2-TRICHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
BENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TRANS-1,3-DICHLOROPROPENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
BROMOFORM	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-METHYL-2-PENTANONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
2-HEXANONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TETRACHLOROETHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,1,2,2-TETRACHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TOLUENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
ETHYLBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
STYRENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
XYLENES (TOTAL)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CIS-1,2-DICHLOROETHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10

ALL UNITS UG/L

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-1	MW-1D	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	Cistern		
SEMI-VOLATILE ORGANIC COMPOUNDS											
PHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BIS(2-CHLOROETHYL)ETHER	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2-CHLOROPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
1,3-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
1,4-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
1,2-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,2'-OXYBIS(1-CHLOROPROPANE)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
N-NITROSO-DI-N-PROPYLAMINE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
HEXACHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
NITROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
ISOPHORONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2-NITROPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,4-DIMETHYLPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BIS(2-CHLOROETHOXY)METHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,4-DICHLOROPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
1,2,4-TRICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
NAPHTHALENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-CHLOROANILINE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
HEXACHLOROBUTADIENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-CHLORO-3-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2-METHYLNAPHTHALENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
HEXACHLOROCYCLOPENTADIENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,4,6-TRICHLOROPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,4,5-TRICHLOROPHENOL	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
2-CHLORONAPHTHALENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2-NITROANILINE	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
DIMETHYLPHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
ACENAPHTHYLENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,6-DINITROTOLUENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
3-NITROANILINE	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
ACENAPHTHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		

ALL UNITS UG/L

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-1	MW-1D	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	Cistern		
SEMI-VOLATILE ORGANIC COMPOUNDS											
2,4-DINITROPHENOL	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
DIBENZOFURAN	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-NITROPHENOL	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
2,4-DINITROTOLUENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
FLUORENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
DIETHYLPHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-CHLOROPHENYLPHENYL ETHER	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-NITROANILINE	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
2-METHYL-4,6-DINITROPHENOL	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
N-NITROSODIPHENYLAMINE (1)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-BROMOPHENYLPHENYL ETHER	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
HEXACHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
PENTACHLOROPHENOL	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
PHENANTHRENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
ANTHRACENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
DI-N-BUTYLPHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
FLUORANTHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
PYRENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BUTYLBENZYLPHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
3,3'-DICHLOROBENZIDINE	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20		
BENZO(A)ANTHRACENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
CHRYSENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BIS(2-ETHYLHEXYL)PHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
DI-N-OCTYLPHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BENZO(B)FLUORANTHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BENZO(K)FLUORANTHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BENZO(A)PYRENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
INDENO(1,2,3-CD)PYRENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
DIBENZO(A,H)ANTHRACENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BENZO(G,H,I)PERYLENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
CARBAZOLE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		

ALL UNITS UG/L

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	FB-GW	FB-1	FB-2	FB-3	FB-4
SEMI-VOLATILE ORGANIC COMPOUNDS					
PHENOL	< 10	< 10	< 10	< 10	< 10
BIS(2-CHLOROETHYL)ETHER	< 10	< 10	< 10	< 10	< 10
2-CHLOROPHENOL	< 10	< 10	< 10	< 10	< 10
1,3-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10
1,4-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10
1,2-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10
2-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10
2,2'-OXYBIS(1-CHLOROPROPANE)	< 10	< 10	< 10	< 10	< 10
4-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10
N-NITROSO-DI-N-PROPYLAMINE	< 10	< 10	< 10	< 10	< 10
HEXACHLOROETHANE	< 10	< 10	< 10	< 10	< 10
NITROBENZENE	< 10	< 10	< 10	< 10	< 10
ISOPHORONE	< 10	< 10	< 10	< 10	< 10
2-NITROPHENOL	< 10	< 10	< 10	< 10	< 10
2,4-DIMETHYLPHENOL	< 10	< 10	< 10	< 10	< 10
BIS(2-CHLOROETHOXY)METHANE	< 10	< 10	< 10	< 10	< 10
2,4-DICHLOROPHENOL	< 10	< 10	< 10	< 10	< 10
1,2,4-TRICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10
NAPHTHALENE	< 10	< 10	< 10	< 10	< 10
4-CHLOROANILINE	< 10	< 10	< 10	< 10	< 10
HEXACHLOROBUTADIENE	< 10	< 10	< 10	< 10	< 10
4-CHLORO-3-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10
2-METHYLNAPHTHALENE	< 10	< 10	< 10	< 10	< 10
HEXACHLOROCYCLOPENTADIENE	< 10	< 10	< 10	< 10	< 10
2,4,6-TRICHLOROPHENOL	< 10	< 10	< 10	< 10	< 10
2,4,5-TRICHLOROPHENOL	< 25	< 25	< 25	< 25	< 25
2-CHLORONAPHTHALENE	< 10	< 10	< 10	< 10	< 10
2-NITROANILINE	< 25	< 25	< 25	< 25	< 25
DIMETHYLPHTHALATE	< 10	< 10	< 10	< 10	< 10
ACENAPHTHYLENE	< 10	< 10	< 10	< 10	< 10
2,6-DINITROTOLUENE	< 10	< 10	< 10	< 10	< 10
3-NITROANILINE	< 25	< 25	< 25	< 25	< 25
ACENAPHTHENE	< 10	< 10	< 10	< 10	< 10

ALL UNITS UG/L

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TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	FB-GW	FB-1	FB-2	FB-3	FB-4
SEMI-VOLATILE ORGANIC COMPOUNDS					
2,4-DINITROPHENOL	< 25	< 25	< 25	< 25	< 25
DIBENZOFURAN	< 10	< 10	< 10	< 10	< 10
4-NITROPHENOL	< 25	< 25	< 25	< 25	< 25
2,4-DINITROTOLUENE	< 10	< 10	< 10	< 10	< 10
FLUORENE	< 10	< 10	< 10	< 10	< 10
DIETHYLPHTHALATE	< 10	< 10	< 10	< 10	< 10
4-CHLOROPHENYLPHENYL ETHER	< 10	< 10	< 10	< 10	< 10
4-NITROANILINE	< 25	< 25	< 25	< 25	< 25
2-METHYL-4,6-DINITROPHENOL	< 25	< 25	< 25	< 25	< 25
N-NITROSODIPHENYLAMINE (1)	< 10	< 10	< 10	< 10	< 10
4-BROMOPHENYLPHENYL ETHER	< 10	< 10	< 10	< 10	< 10
HEXACHLOROBENZENE	< 10	< 10	< 10	< 10	< 10
PENTACHLOROPHENOL	< 25	< 25	< 25	< 25	< 25
PHENANTHRENE	< 10	< 10	< 10	< 10	< 10
ANTHRACENE	< 10	< 10	< 10	< 10	< 10
DI-N-BUTYLPHTHALATE	< 10	< 10	< 10	< 10	< 10
FLUORANTHENE	< 10	< 10	< 10	< 10	< 10
PYRENE	< 10	< 10	< 10	< 10	< 10
BUTYLBENZYLPHTHALATE	< 10	< 10	< 10	< 10	< 10
3,3'-DICHLOROBENZIDINE	< 20	< 20	< 20	< 20	< 20
BENZO(A)ANTHRACENE	< 10	< 10	< 10	< 10	< 10
CHRYSENE	< 10	< 10	< 10	< 10	< 10
BIS(2-ETHYLHEXYL)PHTHALATE	< 10	< 10	< 10	150	< 10
DI-N-OCTYLPHTHALATE	< 10	< 10	< 10	< 10	< 10
BENZO(B)FLUORANTHENE	< 10	< 10	< 10	< 10	< 10
BENZO(K)FLUORANTHENE	< 10	< 10	< 10	< 10	< 10
BENZO(A)PYRENE	< 10	< 10	< 10	< 10	< 10
INDENO(1,2,3-CD)PYRENE	< 10	< 10	< 10	< 10	< 10
DIBENZO(A,H)ANTHRACENE	< 10	< 10	< 10	< 10	< 10
BENZO(G,H,I)PERYLENE	< 10	< 10	< 10	< 10	< 10
CARBAZOLE	< 10	< 10	< 10	< 10	< 10

ALL UNITS UG/L

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-1	MW-1D	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	Cistern	Illinois Class I Standards
INORGANICS										
ALUMINUM	<52.2	<52.2	<52.2	<52.2	55.1	<52.2	<52.2	<52.2	<52.2	--
ANTIMONY	<13.2	18.8	14	<13.2	<13.2	<13.2	<13.2	<13.2	<13.2	--
ARSENIC	6470	6480	28	<1.4	4.8	3.4	<1.4	<1.4	<1.4	50
BARIUM	122	118	81.8	100	106	91.3	38.6	81	47.2	2000
BERYLLIUM	<1	<1	<1	<1	<1	<1	<1	<1	<1	--
CADMIUM	<2.9	<2.8	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	5
CALCIUM	344000	371000	282000	330000	271000	291000	263000	381000	33300	--
CHROMIUM	23.7	22.4	23.2	<4.2	12.5	6.6	<4.2	<4.2	<4.2	100
COBALT	12.6	13.8	4.2	23.8	11.7	28.9	<2.8	21.9	<2.8	1000
COPPER	8	7.3	9	6.5	7.3	8	8.4	10.8	4	650
IRON	208	183	249	10400	34500	8340	15.4	6080	150	5000
LEAD	40.7	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	2.8	4.5	7.5
MAGNESIUM	158000	152000	83000	94800	102000	49500	42800	32000	6680	--
MANGANESE	1840	1620	264	4140	2950	2430	1780	3140	133	150
MERCURY	0.1	<0.1	0.09	0.17	0.57	0.16	<0.10	0.58	0.18	2
NICKEL	88	83.8	19.3	28.8	29	29	13.1	20.5	<8.8	100
POTASSIUM	4050	3890	1830	4350	8250	6950	8370	37800	5370	--
SELENIUM	<14	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	9.9	1.6	50
SILVER	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	50
SODIUM	120000	112000	17400	96800	83400	74400	121000	142000	29000	--
THALLIUM	<1	<1	<1	1.5	<10	<10	<1	<1	<1	--
VANADIUM	6.3	8.8	3.1	2.2	7.8	2.8	2	3.8	<1.9	--
ZINC	30.7	33.6	23.3	118	20.7	19.2	37.7	43.2	8.8	5000
CYANIDE	<10	<10	<10	<10	<10	<10	<10	<10	<10	200
TDS	2524000	2702000	1878000	1780000	1870000	1742000	1490000	1812000	288000	1,200,000

ALL UNITS UG/L
- INDICATES EXCEEDANCE OF CLASS I STANDARDS

MWG13-15_47228

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	FB-GW	FB-1	FB-2	FB-3	FB-4						
INORGANICS											
ALUMINUM	<52.2	<52.2	<52.2	<52.2	<52.2						
ANTIMONY	<13.2	<13.2	<13.2	<13.2	<13.2						
ARSENIC	<1.4	<1.4	<1.4	<1.4	<1.4						
BARIUM	<1	<1	<1	<1	<1						
BERYLLIUM	<1	<1	<1	<1	<1						
CADMIUM	<2.9	<2.9	<2.9	<2.9	<2.9						
CALCIUM	258	104	244	185	150						
CHROMIUM	<4.2	<4.2	<4.2	<4.2	<4.2						
COBALT	<2.8	<2.8	<2.8	<2.8	<2.8						
COPPER	7.3	9.4	8.1	10	3.8						
IRON	11.5	14.8	18.4	101	10.4						
LEAD	3	2.4	<2.4	<2.4	<2.4						
MAGNESIUM	<54.3	<54.3	<54.3	<54.3	<54.3						
MANGANESE	<2.3	<2.3	<2.3	<2.3	<2.3						
MERCURY	0.12	<0.1	0.13	0.11	0.18						
NICKEL	<6.6	<6.6	<6.6	<6.6	<6.6						
POTASSIUM	157	<101	<101	<101	<101						
SELENIUM	1.4	<1.4	<1.4	<1.4	<1.4						
SILVER	<2.1	<2.1	<2.1	<2.1	<2.1						
SODIUM	702	281	845	1310	203						
THALLIUM	<1	<1	<1	<1	<1						
VANADIUM	<1.9	<1.9	<1.9	<1.9	<1.9						
ZINC	40.9	7.9	52.5	29.5	48.4						
CYANIDE	<10	<10	10	<10	<10						
TDS	6000	N/A	N/A	N/A	N/A						

ALL UNITS UG/L

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-30A	SB-30B	SB-32B	SB-33A	SB-33B	SB-34B	SB-35B	SB-36A	SB-36B	SB-37B	SB-38B
	(0-1')	(2-4')	(2-3')	(0-1')	(2-3')	(2-3')	(2-3')	(0-1')	(2-3')	(2-3')	(2-3')
VOLATILE ORGANICS											
CHLOROMETHANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
BROMOMETHANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
VINYL CHLORIDE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
CHLOROETHANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
METHYLENE CHLORIDE	< 14	< 12	< 12	< 11	< 14	< 11	12J	< 10	< 11	18	< 12
ACETONE	< 14	< 12	< 12	< 11	< 25	< 11	< 13	< 10	< 11	< 11	< 12
CARBON DISULFIDE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
1,1-DICHLOROETHENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
1,1-DICHLOROETHANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
TRANS-1,2-DICHLOROETHENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
CHLOROFORM	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
1,2-DICHLOROETHANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
2-BUTANONE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
1,1,1-TRICHLOROETHANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
CARBON TETRACHLORIDE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
BROMODICHLOROMETHANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
1,2-DICHLOROPROPANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
CIS-1,3-DICHLOROPROPENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
TRICHLOROETHENE	< 14	< 12	< 12	< 11	7J	< 11	< 13	< 10	< 11	< 11	< 12
DIBROMOCHLOROMETHANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
1,1,2-TRICHLOROETHANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
BENZENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
TRANS-1,3-DICHLOROPROPENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
BROMOFORM	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
4-METHYL-2-PENTANONE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
2-HEXANONE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
TETRACHLOROETHENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
1,1,2,2-TETRACHLOROETHANE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
TOLUENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
CHLOROBENZENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
ETHYLBENZENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
STYRENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
XYLENES (TOTAL)	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12
CIS-1,2-DICHLOROETHENE	< 14	< 12	< 12	< 11	< 14	< 11	< 13	< 10	< 11	< 11	< 12

ALL UNITS UG/KG
J – INDICATES ESTIMATED VALUE
QUANTITATION LIMITS FOR ACETONE HAVE BEEN ADJUSTED TO REFLECT LABORATORY, FIELD, AND TRIP BLANKS.

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS-39A (0-1')	SS-39B (2-4')	SS-40B (2-3')	SS-41A (2-4')	SS-42A (0-1')	SS-42B (2-6')	SS-43A (0-2')	SS-12			
VOLATILE ORGANICS											
CHLOROMETHANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
BROMOMETHANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
VINYL CHLORIDE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
CHLOROETHANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
METHYLENE CHLORIDE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
ACETONE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
CARBON DISULFIDE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
1,1-DICHLOROETHENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
1,1-DICHLOROETHANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
TRANS-1,2-DICHLOROETHENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
CHLOROFORM	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
1,2-DICHLOROETHANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
2-BUTANONE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
1,1,1-TRICHLOROETHANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
CARBON TETRACHLORIDE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
BROMODICHLOROMETHANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
1,2-DICHLOROPROPANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
CIS-1,3-DICHLOROPROPENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
TRICHLOROETHENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
DIBROMOCHLOROMETHANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
1,1,2-TRICHLOROETHANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
BENZENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
TRANS-1,3-DICHLOROPROPENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
BROMOFORM	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
4-METHYL-2-PENTANONE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
2-HEXANONE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
TETRACHLOROETHENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
1,1,2,2-TETRACHLOROETHANE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
TOLUENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
CHLOROBENZENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
ETHYLBENZENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
STYRENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
XYLENES (TOTAL)	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			
CIS-1,2-DICHLOROETHENE	< 13	< 14	< 17	< 14	< 12	< 12	< 14	< 17			

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE
QUANTITATION LIMITS FOR ACETONE HAVE BEEN ADJUSTED TO REFLECT LABORATORY, FIELD, AND TRIP BLANKS.

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-4A	MW-4B	MW-7A	MW-7B							
	(2-4')	(4-6')	(2-4')	(4-6')							
VOLATILE ORGANICS											
CHLOROMETHANE	< 12	< 14	< 13	< 12							
BROMOMETHANE	< 12	< 14	< 13	< 12							
VINYL CHLORIDE	< 13	< 14	< 13	< 12							
CHLOROETHANE	< 12	< 14	< 13	< 12							
METHYLENE CHLORIDE	< 12	< 14	< 13	< 12							
ACETONE	< 12	< 14	< 13	< 12							
CARBON DISULFIDE	< 12	< 14	< 13	< 12							
1,1-DICHLOROETHENE	< 12	< 14	< 13	< 12							
1,1-DICHLOROETHANE	< 12	< 14	< 13	< 12							
TRANS-1,2-DICHLOROETHENE	< 12	< 14	< 13	< 12							
CHLOROFORM	< 12	< 14	< 13	< 12							
1,2-DICHLOROETHANE	< 12	< 14	< 13	< 12							
2-BUTANONE	< 12	< 14	< 13	< 12							
1,1,1-TRICHLOROETHANE	< 12	< 14	< 13	< 12							
CARBON TETRACHLORIDE	< 12	< 14	< 13	< 12							
BROMODICHLOROMETHANE	< 12	< 14	< 13	< 12							
1,2-DICHLOROPROPANE	< 12	< 14	< 13	< 12							
CIS-1,3-DICHLOROPROPENE	< 12	< 14	< 13	< 12							
TRICHLOROETHENE	< 12	< 14	< 13	< 12							
DIBROMOCHLOROMETHANE	< 12	< 14	< 13	< 12							
1,1,2-TRICHLOROETHANE	< 12	< 14	< 13	< 12							
BENZENE	< 12	< 14	< 13	< 12							
TRANS-1,3-DICHLOROPROPENE	< 12	< 14	< 13	< 12							
BROMOFORM	< 12	< 14	< 13	< 12							
4-METHYL-2-PENTANONE	< 12	< 14	< 13	< 12							
2-HEXANONE	< 12	< 14	< 13	< 12							
TETRACHLOROETHENE	< 12	< 14	< 13	< 12							
1,1,2,2-TETRACHLOROETHANE	< 12	< 14	< 13	< 12							
TOLUENE	< 12	< 14	< 13	< 12							
CHLOROBENZENE	< 12	< 14	< 13	< 12							
ETHYLBENZENE	< 12	< 14	< 13	< 12							
STYRENE	< 12	< 14	< 13	< 12							
XYLENES (TOTAL)	< 12	< 14	< 13	< 12							
CIS-1,2-DICHLOROETHENE	< 12	< 14	< 13	< 12							

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE
QUANTITATION LIMITS FOR ACETONE HAVE BEEN ADJUSTED TO REFLECT LABORATORY, FIELD, AND TRIP BLANKS.

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-30A	SB-30B	SB-32B	SB-33A	SB-33B	SB-34B	SB-35B	SB-36A	SB-36B	SB-37B	SB-38B
	(0-1')	(2-4')	(2-3')	(0-1')	(2-3')	(2-3')	(2-3')	(0-1')	(2-3')	(2-3')	(2-3')
SEMI-VOLATILE ORGANIC COMPOUNDS											
PHENOL	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
BIS(2-CHLOROETHYL)ETHER	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
2-CHLOROPHENOL	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
1,3-DICHLOROBENZENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
1,4-DICHLOROBENZENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
1,2-DICHLOROBENZENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
2-METHYLPHENOL	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
2,2'-OXYBIS(1-CHLOROPROPANE)	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
4-METHYLPHENOL	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
N-NITROSO-DI-N-PROPYLAMINE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
HEXACHLOROETHANE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
NITROBENZENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
ISOPHORONE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
2-NITROPHENOL	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
2,4-DIMETHYLPHENOL	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
BIS(2-CHLOROETHOXY)METHANE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
2,4-DICHLOROPHENOL	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
1,2,4-TRICHLOROBENZENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
NAPHTHALENE	1300	< 740	170J	< 700	220J	< 380	< 420	170J	83J	180J	< 400
4-CHLOROANILINE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
HEXACHLOROBUTADIENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
4-CHLORO-3-METHYLPHENOL	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
2-METHYLNAPHTHALENE	3500	< 740	210J	< 700	120J	< 380	< 420	58J	< 680	86J	< 400
HEXACHLOROCYCLOPENTADIENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
2,4,6-TRICHLOROPHENOL	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
2,4,5-TRICHLOROPHENOL	< 2100	< 1800	< 2000	< 1700	< 2100	< 880	< 1100	< 840	< 1700	< 1800	< 990
2-CHLORONAPHTHALENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
2-NITROANILINE	< 2100	< 1800	< 2000	< 1700	< 2100	< 880	< 1100	< 840	< 1700	< 1800	< 990
DIMETHYLPHTHALATE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
ACENAPHTHYLENE	< 820	< 740	< 780	< 700	310J	< 380	< 420	55J	130J	< 700	< 400
2,6-DINITROTOLUENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
3-NITROANILINE	< 2100	< 1800	< 2000	< 1700	< 2100	< 880	< 1100	< 840	< 1700	< 1800	< 990
ACENAPHTHENE	< 820	< 740	< 780	73J	800J	< 380	< 420	300J	270J	350J	< 400

ALL UNITS UG/KG

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-30A	SB-30B	SB-32B	SB-33A	SB-33B	SB-34B	SB-35B	SB-36A	SB-36B	SB-37B	SB-38B
	(0-1')	(2-4')	(2-3')	(0-1')	(2-3')	(2-3')	(2-3')	(0-1')	(2-3')	(2-3')	(2-3')
SEMI-VOLATILE ORGANIC COMPOUNDS											
2,4-DINITROPHENOL	< 2100	< 1800	< 2000	< 1700	< 2100	< 880	< 1100	< 840	< 1700	< 1800	< 990
DIBENZOFURAN	1800	< 740	< 780	< 700	450J	< 380	< 420	170J	140J	240J	< 400
4-NITROPHENOL	< 2100	< 1800	< 2000	< 1700	< 2100	< 880	< 1100	< 840	< 1700	< 1800	< 990
2,4-DINITROTOLUENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
FLUORENE	< 820	< 740	< 780	89J	730J	< 380	< 420	340	310J	460J	< 400
DIETHYLPHTHALATE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
4-CHLOROPHENYLPHENYL ETHER	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
4-NITROANILINE	< 2100	< 1800	< 2000	< 1700	< 2100	< 880	< 1100	< 840	< 1700	< 1800	< 990
2-METHYL-4,6-DINITROPHENOL	< 2100	< 1800	< 2000	< 1700	< 2100	< 880	< 1100	< 840	< 1700	< 1800	< 990
N-NITROSODIPHENYLAMINE (1)	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
4-BROMOPHENYLPHENYL ETHER	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
HEXACHLOROBENZENE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
PENTACHLOROPHENOL	< 2100	< 1800	< 2000	< 1700	< 2100	< 880	< 1100	< 840	< 1700	< 1800	< 990
PHENANTHRENE	2400	< 740	1100	780	3800	< 380	140J	3300	4200	5300	< 400
ANTHRACENE	3400	< 740	110J	140J	880	< 380	< 420	740	840	870	< 400
DI-N-BUTYLPHTHALATE	< 820	< 740	< 780	< 700	180J	< 380	< 420	< 340	< 680	< 700	< 400
FLUORANTHENE	< 820	< 740	210J	2800	24000	< 380	< 420	5700	7800	17000	< 400
PYRENE	< 820	< 740	220J	1400	18000	< 380	< 420	2800	5000	4700	< 400
BUTYLBENZYLPHTHALATE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
3,3'-DICHLOROBENZIDINE	< 1800	< 1500	< 1800	< 1400	< 1700	< 710	< 840	< 670	< 1400	< 1400	< 790
BENZO(A)ANTHRACENE	< 820	< 740	< 780	1200	< 850	< 380	< 420	2800	3800	3000	< 400
CHRYSENE	< 820	< 740	< 780	1800	< 850	< 380	< 420	2500	3400	3000	< 400
BIS(2-ETHYLHEXYL)PHTHALATE	< 820	< 740	< 780	< 780	< 850	< 380	< 420	< 340	< 680	< 780	< 400
DI-N-OCTYLPHTHALATE	< 820	< 740	< 780	< 700	< 850	< 380	< 420	< 340	< 680	< 700	< 400
BENZO(B)FLUORANTHENE	< 820	< 740	< 780	2400	27000	< 380	< 420	2400	5300	4500	< 400
BENZO(K)FLUORANTHENE	< 820	< 740	< 780	780	8400	< 380	< 420	920	1400	1300	< 400
BENZO(A)PYRENE	< 820	< 740	< 780	1200	8800	< 380	< 420	1300	1700	230J	< 400
INDENO(1,2,3-CD)PYRENE	< 820	< 740	< 780	730	8500	< 380	< 420	110J	1000	640J	< 400
DIBENZO(A,H)ANTHRACENE	< 820	< 740	< 780	130J	1000	< 380	< 420	200J	130J	120J	< 400
BENZO(G,H,I)PERYLENE	< 820	< 740	< 780	500J	3400	< 380	< 420	250J	220J	200J	< 400
CARBAZOLE	< 820	< 740	< 780	< 700	810	< 380	< 420	520	490J	820J	< 400

ALL UNITS UG/KG
J – INDICATES ESTIMATED VALUE

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-38A	SB-38B	SB-40B	SB-41A	SB-42A	SB-42B	SB-43A	SB-12
	(0-1')	(2-4')	(2-3')	(2-4')	(0-1')	(2-4')	(0-2')	
SEMI-VOLATILE ORGANIC COMPOUNDS								
PHENOL	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
BIS(2-CHLOROETHYL)ETHER	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
2-CHLOROPHENOL	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
1,3-DICHLOROBENZENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
1,4-DICHLOROBENZENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
1,2-DICHLOROBENZENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
2-METHYLPHENOL	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
2,2'-OXYBIS(1-CHLOROPROPANE)	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
4-METHYLPHENOL	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
N-NITROSO-DI-N-PROPYLAMINE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
HEXACHLOROETHANE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
NITROBENZENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
ISOPHORONE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
2-NITROPHENOL	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
2,4-DIMETHYLPHENOL	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
BIS(2-CHLOROETHOXY)METHANE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
2,4-DICHLOROPHENOL	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
1,2,4-TRICHLOROBENZENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
NAPHTHALENE	580	480J	< 1100	< 440	220J	< 750	< 430	< 1300
4-CHLOROANILINE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
HEXACHLOROBUTADIENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
4-CHLORO-3-METHYLPHENOL	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
2-METHYLNAPHTHALENE	280J	270J	< 1100	< 440	240J	< 750	< 430	< 1300
HEXACHLOROCYCLOPENTADIENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
2,4,6-TRICHLOROPHENOL	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
2,4,5-TRICHLOROPHENOL	< 1100	< 2200	< 2700	< 1100	< 1800	< 1900	< 1100	< 3200
2-CHLORONAPHTHALENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
2-NITROANILINE	< 1100	< 2200	< 2700	< 1100	< 1800	< 1900	< 1100	< 3200
DIMETHYLPHTHALATE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
ACENAPHTHYLENE	480	340J	< 1100	< 440	< 720	< 750	< 430	< 1300
2,6-DINITROTOLUENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
3-NITROANILINE	< 1100	< 2200	< 2700	< 1100	< 1800	< 1900	< 1100	< 3200
ACENAPHTHENE	820	900	< 1100	< 440	< 720	< 750	58J	< 1300

ALL UNITS UG/KG

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS-39A	SS-39B	SB-40B	SB-41A	SB-42A	SB-42B	SB-43A	SS-12
	(0-1')	(2-4')	(2-3')	(2-4')	(0-1')	(2-4')	(0-2')	
SEMI-VOLATILE ORGANIC COMPOUNDS								
2,4-DINITROPHENOL	< 1100	< 2200	< 2700	< 1100	< 1800	< 1800	< 1100	< 3200
DIBENZOFURAN	810	650J	< 1100	< 440	< 720	< 750	< 430	< 1300
4-NITROPHENOL	< 1100	< 2200	< 2700	< 1100	< 1800	< 1800	< 1100	< 3200
2,4-DINITROTOLUENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
FLUORENE	820	1100	< 1100	< 440	< 720	< 750	73J	< 1300
DIETHYLPHTHALATE	< 430	< 880	< 1100	< 440	< 720	< 750	48J	< 1300
4-CHLOROPHENYLPHENYL ETHER	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
4-NITROANILINE	< 1100	< 2200	< 2700	< 1100	< 1800	< 1800	< 1100	< 3200
2-METHYL-4,6-DINITROPHENOL	< 1100	< 2200	< 2700	< 1100	< 1800	< 1800	< 1100	< 3200
N-NITROSODIPHENYLAMINE (1)	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
4-BROMOPHENYLPHENYL ETHER	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
HEXACHLOROBENZENE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
PENTACHLOROPHENOL	< 1100	< 2200	< 2700	< 1100	< 1800	< 1800	< 1100	< 3200
PHENANTHRENE	12000	7700	780J	< 440	180J	< 750	610	8400
ANTHRACENE	2500	2100	130J	< 440	< 720	250J	78J	< 1300
DI-N-BUTYLPHTHALATE	< 430	< 880	< 1100	< 440	< 720	< 750	43J	< 1300
FLUORANTHENE	18000	800	1100	< 440	110J	< 750	1800	7800
PYRENE	2300	1400	1100J	< 440	120J	200J	1300	8300
BUTYLBENZYLPHTHALATE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
3,3'-DICHLOROBENZIDINE	< 880	< 1800	< 2100	< 880	< 1400	< 1500	< 870	< 2500
BENZO(A)ANTHRACENE	1000	4700	820J	< 440	< 720	< 750	880	3400
CHRYSENE	8100	4100	480J	< 440	180J	200J	1000	2800
BIS(2-ETHYLHEXYL)PHTHALATE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
DI-N-OCTYLPHTHALATE	< 430	< 880	< 1100	< 440	< 720	< 750	< 430	< 1300
BENZO(B)FLUORANTHENE	14000	7000	1100	< 440	140J	170J	< 430	3800
BENZO(K)FLUORANTHENE	2000	2300	380J	< 440	58J	< 750	< 430	1300
BENZO(A)PYRENE	100J	2100	< 1100	< 440	80J	< 750	480	2100
INDENO(1,2,3-CD)PYRENE	1000	810	< 1100	< 440	84J	< 750	52J	< 1300
DIBENZO(A,H)ANTHRACENE	850	220J	< 1100	< 440	< 720	< 750	< 430	< 1300
BENZO(G,H,I)PERYLENE	830	880J	< 1100	< 440	80J	< 750	< 430	< 1300
CARBAZOLE	1800	240J	< 1100	< 440	< 720	< 750	< 430	< 1300

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

MWG13-15_47236

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-4A (2-4')	MW-4B (4-6')	MW-7A (2-4')	MW-7B (4-6')
SEMI-VOLATILE ORGANIC COMPOUNDS				
2,4-DINITROPHENOL	< 930	< 2300	< 2000	< 980
DIBENZOFURAN	< 370	230J	< 780	< 390
4-NITROPHENOL	< 930	< 2300	< 2000	< 980
2,4-DINITROTOLUENE	< 370	< 930	< 780	< 390
FLUORENE	< 370	470J	< 780	< 390
DIETHYLPHTHALATE	< 370	< 930	< 780	< 390
4-CHLOROPHENYLPHENYL ETHER	< 370	< 930	< 780	< 390
4-NITROANILINE	< 930	< 2300	< 2000	< 980
2-METHYL-4,6-DINITROPHENOL	< 930	< 2300	< 2000	< 980
N-NITROSODIPHENYLAMINE (1)	< 370	< 930	< 780	< 390
4-BROMOPHENYLPHENYL ETHER	< 370	< 930	< 780	< 390
HEXACHLOROBENZENE	< 370	< 930	< 780	< 390
PENTACHLOROPHENOL	< 930	< 2300	< 2000	< 980
PHENANTHRENE	< 370	4000	< 780	580
ANTHRACENE	< 370	730J	< 780	< 390
DI-N-BUTYLPHTHALATE	< 370	< 930	< 780	< 390
FLUORANTHENE	< 370	1400	< 780	820
PYRENE	< 370	1700	< 780	830
BUTYLBENZYLPHTHALATE	< 370	< 930	< 780	< 390
3,3'-DICHLOROBENZIDINE	< 750	< 1900	< 1600	< 780
BENZO(A)ANTHRACENE	< 370	940	< 780	350J
CHRYSENE	< 370	740J	< 780	310J
BIS(2-ETHYLHEXYL)PHTHALATE	< 370	< 930	< 780	< 390
DI-N-OCTYLPHTHALATE	< 370	< 930	< 780	< 390
BENZO(B)FLUORANTHENE	< 370	740J	< 780	270J
BENZO(K)FLUORANTHENE	< 370	< 930	< 780	100J
BENZO(A)PYRENE	< 370	< 930	< 780	< 390
INDENO(1,2,3-CD)PYRENE	< 370	< 930	< 780	< 390
DIBENZO(A,H)ANTHRACENE	< 370	< 930	< 780	< 390
BENZO(G,H,I)PERYLENE	< 370	< 930	< 780	< 390
CARBAZOLE	< 370	< 930	< 780	< 390

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-4A	MW-4B	MW-7A	MW-7B
	(2-4')	(4-6')	(2-4')	(4-6')
SEMI-VOLATILE ORGANIC COMPOUNDS				
PHENOL	< 370	< 830	< 780	< 390
BIS(2-CHLOROETHYL)ETHER	< 370	< 830	< 780	< 390
2-CHLOROPHENOL	< 370	< 830	< 780	< 390
1,3-DICHLOROBENZENE	< 370	< 830	< 780	< 390
1,4-DICHLOROBENZENE	< 370	< 830	< 780	< 390
1,2-DICHLOROBENZENE	< 370	< 830	< 780	< 390
2-METHYLPHENOL	< 370	< 830	< 780	< 390
2,2'-OXYBIS(1-CHLOROPROPANE)	< 370	< 830	< 780	< 390
4-METHYLPHENOL	< 370	< 830	< 780	< 390
N-NITROSO-DI-N-PROPYLAMINE	< 370	< 830	< 780	< 390
HEXACHLOROETHANE	< 370	< 830	< 780	< 390
NITROBENZENE	< 370	< 830	< 780	< 390
ISOPHORONE	< 370	< 830	< 780	< 390
2-NITROPHENOL	< 370	< 830	< 780	< 390
2,4-DIMETHYLPHENOL	< 370	< 830	< 780	< 390
BIS(2-CHLOROETHOXY)METHANE	< 370	< 830	< 780	< 390
2,4-DICHLOROPHENOL	< 370	< 830	< 780	< 390
1,2,4-TRICHLOROBENZENE	< 370	< 830	< 780	< 390
NAPHTHALENE	< 370	800J	< 780	< 390
4-CHLOROANILINE	< 370	< 830	< 780	< 390
HEXACHLOROBUTADIENE	< 370	< 830	< 780	< 390
4-CHLORO-3-METHYLPHENOL	< 370	< 830	< 780	< 390
2-METHYLNAPHTHALENE	< 370	1400	< 780	< 390
HEXACHLOROCYCLOPENTADIENE	< 370	< 830	< 780	< 390
2,4,6-TRICHLOROPHENOL	< 370	< 830	< 780	< 390
2,4,5-TRICHLOROPHENOL	< 830	< 2300	< 2000	< 960
2-CHLORONAPHTHALENE	< 370	< 830	< 780	< 390
2-NITROANILINE	< 830	< 2300	< 2000	< 960
DIMETHYLPHTHALATE	< 370	< 830	< 780	< 390
ACENAPHTHYLENE	< 370	< 830	< 780	< 390
2,6-DINITROTOLUENE	< 370	< 830	< 780	< 390
3-NITROANILINE	< 830	< 2300	< 2000	< 960
ACENAPHTHENE	< 370	460J	< 780	< 390

ALL UNITS UG/KG

MWG13-15_47238

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-30A	SB-30B	SB-32B	SB-33A	SB-33B	SB-34B	SB-35B	SB-36A	SB-36B	SB-37B	SB-38B
		(2-4')	(2-3')	(0-1')	(2-3')	(2-3')	(2-3')	(0-1')	(2-3')	(2-3')	(2-3')
PESTICIDES											
ALPHA-BHC	< 2.3	< 2.1	< 2.1	< 1.9	< 2.3	< 1.9	< 2.3	< 1.8	< 1.8	< 1.9	< 2.1
BETA-BHC	< 2.3	< 2.1	< 2.1	< 1.9	< 2.3	< 1.9	< 2.3	< 1.8	< 1.8	< 1.9	< 2.1
DELTA-BHC	< 2.3	< 2.1	< 2.1	< 1.9	< 2.3	< 1.9	< 2.3	< 1.8	< 1.8	< 1.9	< 2.1
GAMMA-BHC (LINDANE)	< 2.3	< 2.1	< 2.1	< 1.9	< 2.3	< 1.9	< 2.3	< 1.8	< 1.8	< 1.9	< 2.1
HEPTACHLOR	22	< 2.1	13	< 1.9	< 2.3	< 1.9	8.7	< 1.8	< 1.8	< 1.9	< 2.1
ALDRIN	< 2.3	< 2.1	< 2.1	< 1.9	< 2.3	< 1.9	< 2.3	< 1.8	< 1.8	< 1.9	< 2.1
HEPTACHLOR EPOXIDE	23	< 2.1	9	15	110	< 1.9	< 2.3	7.8	38	< 1.9	< 2.1
ENDOSULFAN I	< 2.3	< 2.1	< 2.1	< 1.9	< 2.3	< 1.9	< 2.3	< 1.8	< 1.8	< 1.9	< 2.1
DIELDRIN	< 4.5	< 4	< 4.1	16	180	< 3.8	< 4.4	< 3.5	< 3.6	19	< 4.1
4,4'-DDE	< 4.5	< 4	< 4.1	15	160	< 3.8	< 4.4	5.1	< 3.6	35	< 4.1
ENDRIN	< 4.5	< 4	< 4.1	< 3.7	< 4.5	< 3.8	< 4.4	< 3.5	< 3.6	< 3.7	< 4.1
ENDOSULFAN II	< 4.5	< 4	< 4.1	< 3.7	< 4.5	< 3.8	< 4.4	< 3.5	< 3.6	< 3.7	< 4.1
4,4'-DDD	< 4.5	< 4	< 4.1	46	92	< 3.8	< 4.4	< 3.5	< 3.6	28	< 4.1
ENDOSULFAN SULFATE	< 4.5	< 4	< 4.1	< 3.7	< 4.5	< 3.8	< 4.4	< 3.5	< 3.6	< 3.7	< 4.1
4,4'-DDT	< 4.5	33	< 4.1	66	160	< 3.8	< 4.4	23	64	400	< 4.1
METHOXYCHLOR	78	< 21	< 21	< 19	< 23	< 19	< 23	< 18	< 18	< 19	< 21
ENDRIN KETONE	< 4.5	< 4	< 4.1	< 3.7	< 4.5	< 3.8	< 4.4	< 3.5	< 3.6	< 3.7	< 4.1
ENDRIN ALDEHYDE	< 4.5	< 4	< 4.1	< 3.7	< 4.5	< 3.8	< 4.4	< 3.5	< 3.6	< 3.7	< 4.1
ALPHA-CHLORDANE	< 2.3	< 2.1	< 2.1	< 1.9	< 2.3	< 1.9	< 2.3	< 1.8	< 1.8	< 1.9	< 2.1
GAMMA-CHLORDANE	16	< 2.1	< 2.1	< 1.9	< 2.3	< 1.9	< 2.3	< 1.8	< 1.8	< 1.9	< 2.1
TOXAPHENE	< 230	< 210	< 210	< 180	< 230	< 190	< 230	< 180	< 180	< 190	< 210
AROCLOR-1016	< 45	< 40	< 41	< 37	< 45	< 38	< 44	< 35	< 36	< 37	< 41
AROCLOR-1221	< 91	< 82	< 84	< 75	< 91	< 77	< 89	< 70	< 73	< 74	< 82
AROCLOR-1232	< 45	< 40	< 41	< 37	< 45	< 38	< 44	< 35	< 36	< 37	< 41
AROCLOR-1242	< 45	< 40	< 41	< 37	< 45	< 38	< 44	< 35	< 36	< 37	< 41
AROCLOR-1248	< 45	< 40	< 41	< 37	3200	< 38	< 44	< 35	< 36	< 37	< 41
AROCLOR-1254	< 45	< 40	< 41	< 37	1800	< 38	< 44	< 35	< 36	< 37	< 41
AROCLOR-1260	< 45	< 40	< 41	< 37	< 45	< 38	< 44	< 35	< 36	< 37	< 41

ALL UNITS UG/KG

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-30A	SB-30B	SB-32B	SB-33A	SB-33B	SB-34B	SB-35B	SB-36A	SB-36B	SB-37B	SB-38B
	(0-1')	(2-4')	(2-3')	(0-1')	(2-3')	(2-3')	(2-3')	(0-1')	(2-3')	(2-3')	(2-3')
INORGANICS											
ALUMINUM	609	630	1730	3110	2300	731	4020	979	1820	2280	703
ANTIMONY	<3.6	<3.2	<3.3	<2.9	<2.9	<3	<3.5	<2.8	<2.9	<2.9	<3.2
ARSENIC	12.1	1.4	8.7	4.4	5.9	0.4	40.6	0.77	1.8	2.8	0.63
BARIUM	18.3	1.9	41.9	66.9	229	3.4	61.1	10.4	21.9	41.6	3.6
BERYLLIUM	1.2	<0.24	0.6	0.27	<0.22	<0.23	1.7	<0.21	<0.22	0.36	<0.23
CADMIUM	<0.78	<0.71	<0.72	1.2	1.4	<0.66	1.5	<0.61	<0.63	2	<0.71
CALCIUM	1250	16800	10000	91400	27400	80300	10100	23400	31100	64800	20100
CHROMIUM	14.2	5.5	22.7	104	704	3.2	19.1	73.1	303	291	4.3
COBALT	1	4.9	3.1	6.3	3.1	1.3	5.7	1.9	2.6	1.9	<0.69
COPPER	20	3.7	8	29	42.4	2.7	31	5.3	12.4	21.2	4
IRON	18400	3720	6300	14800	8860	2740	71000	2730	4180	8660	2660
AD	27	3.1	17.4	45.7	133	1.7	29	18.2	24.2	22	2.5
AGNESIUM	340	8730	5080	48300	12200	10500	1820	11800	14800	38200	10500
ANGANESE	13.3	88.8	57.4	548	181	87.3	135	111	152	218	96
MERCURY	<0.07	<0.06	0.07	0.06	0.30	<0.06	0.12	0.14	0.33	0.24	<0.06
NICKEL	3.6	11.3	7.8	18.7	9.8	<1.9	15.5	3.5	4.8	9.1	<1.8
POTASSIUM	238	80.2	168	534	330	82.5	1010	148	205	298	84.2
SELENIUM	2	<0.83	0.71	<0.31	<0.76	<0.32	0.54	<0.28	<0.3	<0.31	<0.34
SILVER	<0.57	<0.51	<0.52	<0.47	<0.47	<0.46	<0.56	<0.44	<0.46	<0.47	<0.52
SODIUM	209	187	232	220	227	149	723	130	181	190	228
THALLIUM	<0.35	<0.32	<0.25	0.28	<0.29	<0.23	0.36	<0.21	<0.22	<0.22	<0.25
VANADIUM	14.9	14.6	9.9	13.7	10.8	9.1	40.6	4.8	8.5	21.3	4.8
ZINC	61.2	180	152	123	268	15.8	1.3	35.4	49	280	19.4
CYANIDE	<0.34	<0.3	0.67	<0.28	<0.34	<0.29	0.41	<0.26	<0.27	0.28	<0.31

ALL UNITS IN MG/KG

MWG13-15_47240

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-39A (0-1')	SB-39B (2-4')	SB-40B (2-3')	SS-41A (2-4')	SB-42A (0-1')	SB-42B (2-4')	SB-43A (0-2')	SB-12			
INORGANICS											
ALUMINUM	2430	1430	849	7550	4880	8080	7010	2880			
ANTIMONY	<3.8	<3.6	7.5	<3.7	<3.1	<3.1	4 7	<4.4			
ARSENIC	16.8	37 9	45.8	29 4	22	12 2	18.1	8.4			
BARIUM	83.1	38	229	73.7	88.2	167	311	30.8			
BERYLLIUM	0.57	0.26	<0.34	2.5	1 3	0.88	1 3	<0 34			
CADMIUM	1.2	<0.83	15.8	2	1 4	2.8	2 3	<0.87			
CALCIUM	23300	7380	127000	25400	17800	31900	33800	34300			
CHROMIUM	832	278	818	34.6	18 8	14.0	23 3	2800			
COBALT	1.9	1.7	9.2	7.7	8.3	4.8	7	1.7			
COPPER	73.8	30	151	30 8	32.1	47.4	135	33.8			
IRON	28100	8820	188000	15100	18000	23500	28000	7830			
LEAD	212	47.8	290	17 1	57.7	181	389	88.8			
MAGNESIUM	2890	1710	4000	1300	7480	12800	13800	18700			
MANGANESE	186	36.2	785	167	151	160	271	186			
MERCURY	1.6	2.7	25.8	<0 07	0.33	0.08	0 33	1.7			
NICKEL	12.5	6 8	28.1	22 7	16 5	18.3	27	8.1			
POTASSIUM	234	122	187	854	514	482	804	288			
SELENIUM	<0.38	0.83	<0.48	3 2	0 85	8	1 2	0.82			
SILVER	<0.57	<0 6	<0.71	<0 58	<0.48	<0.48	<0 57	<0.7			
SODIUM	275	217	887	361	381	730	434	431			
THALLIUM	<0.27	<0.28	<0.34	3 2	0.51	<0.24	0 6	0 61			
VANADIUM	10.4	8 8	14.3	63 8	38.9	33.2	34 4	13 8			
ZINC	257	106	254	111	127	343	326	326			
CYANIDE	0.67	0.73	0.48	<0 33	<0.29	<0.28	<0.34	<0.42			

ALL UNITS IN MG/KG

MWG13-15_47241

TABLE 6-2
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA I
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-4A	MW-4B	MW-7A	MW-7B
	(2-4')	(4-6')	(2-4')	(4-6')
INORGANICS				
ALUMINUM	1020	4830	6330	8280
ANTIMONY	<3.1	<3.8	<3.5	<3.3
ARSENIC	0.84	5.4	26.8	23.7
BARIUM	4.6	61.8	218	61.8
BERYLLIUM	<0.24	1.7	2.4	1.6
CADMIUM	<0.59	<0.62	3.3	2.3
CALCIUM	13700	23300	18200	34600
CHROMIUM	46.7	69.2	48.1	34.6
COBALT	<0.86	10.6	9.7	7.7
COPPER	6.3	54.2	64.6	68.7
IRON	3100	19400	31200	19800
LEAD	8.1	15.5	313	80.7
MAGNESIUM	8030	7310	1400	6170
MANGANESE	67	222	218	187
MERCURY	<0.06	0.14	0.18	<0.06
NICKEL	24	17.8	23.8	19.5
POTASSIUM	120	487	885	800
SELENIUM	0.61	<0.4	4.1	2.8
SILVER	<0.48	<0.6	<0.58	<0.52
SODIUM	147	3.37	401	303
THALLIUM	<0.24	0.94	3.1	4.1
VANADIUM	8.1	17.4	73.9	59
ZINC	228	681	383	205
CYANIDE	<0.29	<0.36	0.35	<0.31

ALL UNITS IN MG/KG

TABLE 6-3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-01B (1-2')	SB-02A (0-1')	SB-02B (4-5')	SB-03B (0-1')	SB-04B (0-1')	SB-05B (0-6')	SB-06A (0-6')	SB-06B (3.5-4.5')	SB-07B (3-4')	SB-08A (0-6')	SB-08B (4-5')
VOLATILE ORGANICS											
CHLOROMETHANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
BROMOMETHANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
VINYL CHLORIDE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
CHLOROETHANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
METHYLENE CHLORIDE	< 28	21	25	< 29	< 27	< 26	< 22	< 24	< 25	< 19	< 15
ACETONE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 140	46	< 15
CARBON DISULFIDE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	<16	<15
1,1-DICHLOROETHENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
1,1-DICHLOROETHANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
TRANS-1,2-DICHLOROETHENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
CHLOROFORM	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
1,2-DICHLOROETHANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
2-BUTANONE	< 28	< 20	< 23	< 29	20J	< 26	< 22	< 24	< 25	< 16	< 15
1,1,1-TRICHLOROETHANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
CARBON TETRACHLORIDE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
BROMODICHLOROMETHANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
1,2-DICHLOROPROPANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
CIS-1,3-DICHLOROPROPENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
TRICHLOROETHENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
DIBROMOCHLOROMETHANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
1,1,2-TRICHLOROETHANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
BENZENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
TRANS-1,3-DICHLOROPROPENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
BROMOFORM	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
4-METHYL-2-PENTANONE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
2-HEXANONE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
TETRACHLOROETHENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
1,1,2,2-TETRACHLOROETHANE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
TOLUENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
CHLOROBENZENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
ETHYLBENZENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
STYRENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
XYLENES (TOTAL)	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15
CIS-1,2-DICHLOROETHENE	< 28	< 20	< 23	< 29	< 27	< 26	< 22	< 24	< 25	< 16	< 15

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE
QUANTITATION LIMITS FOR ACETONE HAVE BEEN ADJUSTED TO REFLECT LABORATORY, FIELD AND TRIP BLANKS.

TABLE 5-3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS-09B	SS-29B	SS-29BD	SS-31B	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07
	(4-5')	(0-1')	(0-1')	(2-3')							
VOLATILE ORGANICS											
CHLOROMETHANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
BROMOMETHANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
VINYL CHLORIDE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
CHLOROETHANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
METHYLENE CHLORIDE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
ACETONE	< 99	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 160	< 180
CARBON DISULFIDE	22J	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
1,1-DICHLOROETHENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
1,1-DICHLOROETHANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
TRANS-1,2-DICHLOROETHENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
CHLOROFORM	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
1,2-DICHLOROETHANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
2-BUTANONE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	47
1,1,1-TRICHLOROETHANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
CARBON TETRACHLORIDE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
BROMODICHLOROMETHANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
1,2-DICHLOROPROPANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
CIS-1,3-DICHLOROPROPENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
TRICHLOROETHENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
DIBROMOCHLOROMETHANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
1,1,2-TRICHLOROETHANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
BENZENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
TRANS-1,3-DICHLOROPROPENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
BROMOFORM	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
4-METHYL-2-PENTANONE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
2-HEXANONE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
TETRACHLOROETHENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
1,1,2,2-TETRACHLOROETHANE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
TOLUENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
CHLOROBENZENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
ETHYLBENZENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
STYRENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
XYLENES (TOTAL)	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37
CIS-1,2-DICHLOROETHENE	< 25	< 14	< 18	< 27	< 38	< 25	< 31	< 39	< 38	< 36	< 37

ALL UNITS UG/KG
J – INDICATES ESTIMATED VALUE
QUANTITATION LIMITS FOR ACETONE HAVE BEEN ADJUSTED TO REFLECT LABORATORY, FIELD AND TRIP BLANKS.

TABLE 6-3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS-08	SS-08D	SS-09	SS-09D	SS-10	MW-2B (4-6')	MW-2C (6-8')	MW-3B (2-4')	MW-3C (4-6')	MW-3CD (4-6')	
VOLATILE ORGANICS											
CHLOROMETHANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
BROMOMETHANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
VINYL CHLORIDE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
CHLOROETHANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
METHYLENE CHLORIDE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
ACETONE	< 61	< 37	< 13	< 13	< 21	< 29	< 20	< 12	< 12	< 17	
CARBON DISULFIDE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
1,1-DICHLOROETHENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
1,1-DICHLOROETHANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
TRANS-1,2-DICHLOROETHENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
CHLOROFORM	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
1,2-DICHLOROETHANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
2-BUTANONE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
1,1,1-TRICHLOROETHANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
CARBON TETRACHLORIDE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
BROMODICHLOROMETHANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
1,2-DICHLOROPROPANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
CIS-1,3-DICHLOROPROPENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
TRICHLOROETHENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
DIBROMOCHLOROMETHANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
1,1,2-TRICHLOROETHANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
BENZENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
TRANS-1,3-DICHLOROPROPENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
BROMOFORM	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
4-METHYL-2-PENTANONE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
2-HEXANONE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
TETRACHLOROETHENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
1,1,2,2-TETRACHLOROETHANE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
TOLUENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
CHLOROBENZENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
ETHYLBENZENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
STYRENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
XYLENES (TOTAL)	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	
CIS-1,2-DICHLOROETHENE	< 35	< 34	< 13	< 13	< 21	< 19	< 23	< 12	< 12	< 17	

ALL UNITS UG/KG
J – INDICATES ESTIMATED VALUE
QUANTITATION LIMITS FOR ACETONE HAVE BEEN ADJUSTED TO REFLECT LABORATORY, FIELD, AND TRIP BLANKS.

TABLE 6-3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS-01B	SS-02A	SS-02B	SS-03B	SS-04B	SS-05B	SS-06A	SS-06B	SS-07B	SS-08A	SS-08B
	(1-2')	(0-1')	(4-5')	(0-1')	(0-1')	(0-6")	(0-6")	(3.5-4.5')	(3-4')	(0-6")	(4-5')
SEMI-VOLATILE ORGANIC COMPOUNDS											
PHENOL	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
BIS(2-CHLOROETHYL)ETHER	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2-CHLOROPHENOL	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
1,3-DICHLOROBENZENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
1,4-DICHLOROBENZENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
1,2-DICHLOROBENZENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2-METHYLPHENOL	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2,2'-OXYBIS(1-CHLOROPROPANE)	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
4-METHYLPHENOL	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
N-NITROSO-DI-N-PROPYLAMINE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
HEXACHLOROETHANE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
NITROBENZENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
ISOPHORONE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2-NITROPHENOL	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2,4-DIMETHYLPHENOL	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
BIS(2-CHLOROETHOXY)METHANE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2,4-DICHLOROPHENOL	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
1,2,4-TRICHLOROBENZENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
NAPHTHALENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	110J
4-CHLOROANILINE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
HEXACHLOROBUTADIENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
4-CHLORO-3-METHYLPHENOL	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2-METHYLNAPHTHALENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	150J
HEXACHLOROCYCLOPENTADIENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2,4,6-TRICHLOROPHENOL	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2,4,5-TRICHLOROPHENOL	< 4400	< 1600	< 3700	< 2200	< 4200	< 4100	< 1700	< 3600	< 38000	< 2500	< 1200
2-CHLORONAPHTHALENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2-NITROANILINE	< 4400	< 1600	< 3700	< 2200	< 4200	< 4100	< 1700	< 3600	< 38000	< 2500	< 1200
DIMETHYLPHTHALATE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
ACENAPHTHYLENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
2,6-DINITROTOLUENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480
3-NITROANILINE	< 4400	< 1600	< 3700	< 2200	< 4200	< 4100	< 1700	< 3600	< 38000	< 2500	< 1200
ACENAPHTHENE	< 1800	< 640	< 1500	< 890	< 1700	< 1800	< 890	< 1500	< 15000	< 990	< 480

ALL UNITS UG/KG

TABLE 6-3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-01B	SB-02A	SB-02B	SB-03B	SB-04B	SB-05B	SB-06A	SB-06B	SB-07B	SB-08A	SB-08B
	(1-2')	(0-1')	(4-5')	(0-1')	(0-1')	(0-4')	(0-6')	(3.5-4.5')	(3-4')	(0-8')	(4-5')
SEMI-VOLATILE ORGANIC COMPOUNDS											
2,4-DINITROPHENOL	< 4400	< 1600	< 3700	< 2200	< 4200	< 4100	< 1700	< 3600	< 38000	< 2500	< 1200
DIBENZOFURAN	< 1800	< 640	< 1500	< 890	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
4-NITROPHENOL	< 4400	< 1600	< 3700	< 2200	< 4200	< 4100	< 1700	< 3600	< 38000	< 2500	< 1200
2,4-DINITROTOLUENE	< 1800	< 640	< 1500	< 890	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
FLUORENE	< 1800	< 640	< 1500	< 890	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
DIETHYLPHTHALATE	< 1800	< 640	< 1500	< 890	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
4-CHLOROPHENYLPHENYL ETHER	< 1800	< 640	< 1500	< 890	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
4-NITROANILINE	< 4400	< 1600	< 3700	< 2200	< 4200	< 4100	< 1700	< 3600	< 38000	< 2500	< 1200
2-METHYL-4,6-DINITROPHENOL	< 4400	< 1600	< 3700	< 2200	< 4200	< 4100	< 1700	< 3600	< 38000	< 2500	< 1200
N-NITROSODIPHENYLAMINE (1)	< 1800	< 640	< 1500	< 890	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
4-BROMOPHENYLPHENYL ETHER	< 1800	< 640	< 1500	< 890	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
HEXACHLOROBENZENE	< 1800	< 640	< 1500	< 890	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
PENTACHLOROPHENOL	< 4400	< 1600	< 3700	< 2200	< 4200	1200	< 1700	< 3600	< 38000	< 990	< 1200
PHENANTHRENE	< 1800	280J	< 1500	< 890	880J	< 1600	< 890	< 1600	< 15000	< 990	410J
ANTHRACENE	390J	< 640	< 1500	< 880	< 1700	< 1600	< 890	< 1600	< 15000	320J	310
DI-N-BUTYLPHTHALATE	< 1800	< 640	< 1500	< 880	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
FLUORANTHENE	380J	230J	300J	< 890	2100	< 1600	< 890	< 1500	< 15000	300J	400J
PYRENE	110J	230J	260J	< 890	1400J	< 1600	< 890	< 1600	< 15000	260J	190J
BUTYLBENZYLPHTHALATE	< 1800	< 640	< 1500	< 890	< 1700	< 1600	< 890	< 1600	< 15000	< 990	< 480
3,3'-DICHLOROBENZIDINE	< 3500	< 1300	< 2900	< 1800	< 3400	< 3300	< 1400	< 2900	< 31000	< 2000	< 920
BENZO(A)ANTHRACENE	< 1800	< 640	< 1500	< 890	1300J	< 1600	< 890	< 1600	< 15000	< 990	580
CHRYSENE	370J	< 640	140J	< 890	870J	< 1600	< 890	< 1600	< 15000	380J	450J
BIS(2-ETHYLHEXYL)PHTHALATE	5300	560J	< 1500	< 880	< 1700	< 1600	< 9000	< 1500	< 160000	220J	< 480
DI-N-OCTYLPHTHALATE	< 1800	< 640	< 1500	< 890	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
BENZO(B)FLUORANTHENE	260J	470J	410J	< 890	2100	< 1600	< 890	< 1500	< 15000	420J	< 480
BENZO(K)FLUORANTHENE	820J	< 640	< 1500	< 880	1000	< 1600	< 890	< 1500	< 15000	190J	430J
BENZO(A)PYRENE	220J	160J	200J	< 880	880J	< 1600	< 890	< 1600	< 15000	210J	340J
INDENO(1,2,3-CD)PYRENE	< 1800	< 640	< 1500	< 890	220J	< 1600	< 890	< 1600	< 15000	< 990	140J
DIBENZO(A,H)ANTHRACENE	< 1800	< 640	< 1500	< 880	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480
BENZO(G,H,I)PERYLENE	< 1800	< 640	< 1500	< 880	220J	< 1600	< 890	< 1500	< 15000	< 990	72J
CARBAZOLE	< 1800	< 640	< 1500	< 880	< 1700	< 1600	< 890	< 1500	< 15000	< 990	< 480

ALL UNITS UG/KG
J – INDICATES ESTIMATED VALUE

TABLE 6-3

ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II

FORMER GREISS-PFLEGER TANNERY

COMMONWEALTH EDISON COMPANY

WAUKEGAN, ILLINOIS

	SB-06B	SB-29B	SB-29BD	SB-31B	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07
	(4-5')	(0-1')	(0-1')	(2-3')							
SEMI-VOLATILE ORGANIC COMPOUNDS											
PHENOL	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
BIS(2-CHLOROETHYL)ETHER	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2-CHLOROPHENOL	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
1,3-DICHLOROBENZENE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
1,4-DICHLOROBENZENE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
1,2-DICHLOROBENZENE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2-METHYLPHENOL	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2,2'-OXYBIS(1-CHLOROPROPANE)	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
4-METHYLPHENOL	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
N-NITROSO-DI-N-PROPYLAMINE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
HEXACHLOROETHANE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
NITROBENZENE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
ISOPHORONE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2-NITROPHENOL	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2,4-DIMETHYLPHENOL	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
BIS(2-CHLOROETHOXY)METHANE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2,4-DICHLOROPHENOL	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
1,2,4-TRICHLOROBENZENE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
NAPHTHALENE	< 1600	240J	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
4-CHLOROANILINE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
HEXACHLOROBUTADIENE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
4-CHLORO-3-METHYLPHENOL	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2-METHYLNAPHTHALENE	< 1600	110J	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
HEXACHLOROCYCLOPENTADIENE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2,4,6-TRICHLOROPHENOL	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2,4,5-TRICHLOROPHENOL	< 3900	< 2300	< 27000	< 4200	< 5800	< 5000	< 4700	< 14000	< 7600	< 6800	< 2800
2-CHLORONAPHTHALENE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2-NITROANILINE	< 3900	< 2300	< 27000	< 4200	< 5800	< 5000	< 4700	< 14000	< 7600	< 6800	< 2800
DIMETHYLPHTHALATE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
ACENAPHTHYLENE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
2,6-DNITROTOLUENE	< 1600	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
3-NITROANILINE	< 3900	< 2300	< 27000	< 4200	< 5800	< 5000	< 4700	< 14000	< 7600	< 6800	< 2800
ACENAPHTHENE	< 1600	550J	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100

ALL UNITS UG/KG

TABLE 6-3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS-30B	SS-29B	SS-29BD	SS-31B	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07
	(4-5)	(0-1)	(0-1)	(2-3)							
SEMI-VOLATILE ORGANIC COMPOUNDS											
2,4-DINITROPHENOL	< 3800	< 2300	< 27000	< 4200	< 5800	< 5000	< 4700	< 14000	< 7800	< 6800	< 2900
DIBENZOFURAN	< 1800	330J	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
4-NITROPHENOL	< 3800	< 2300	< 27000	< 4200	< 5800	< 5000	< 4700	< 14000	< 7800	< 6800	< 2900
2,4-DINITROTOLUENE	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
FLUORENE	< 1800	770J	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
DIETHYLPHTHALATE	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
4-CHLOROPHENYLPHENYL ETHER	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
4-NITROANILINE	< 3800	< 2300	< 27000	< 4200	< 5800	< 5000	< 4700	< 14000	< 7800	< 6800	< 2900
2-METHYL-4,6-DINITROPHENOL	< 3800	< 2300	< 27000	< 4200	< 5800	< 5000	< 4700	< 14000	< 7800	< 6800	< 2900
N-NITROSODIPHENYLAMINE (1)	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
4-BROMOPHENYLPHENYL ETHER	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
HEXACHLOROBENZENE	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
PENTACHLOROPHENOL	< 3800	< 2300	< 27000	< 4200	< 5800	< 5000	< 4700	< 14000	< 7800	< 6800	< 2900
PHENANTHRENE	220J	7100	18000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
ANTHRACENE	370J	1300	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
DI-N-BUTYLPHTHALATE	< 1800	830J	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
FLUORANTHENE	180J	4500	30000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
PYRENE	< 1800	2000	23000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
BUTYLBENZYLPHTHALATE	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
3,3'-DICHLOROBENZIDINE	< 3200	< 1800	< 22000	< 3400	< 4600	< 4000	< 4000	< 12000	< 6000	< 5400	< 2200
BENZO(A)ANTHRACENE	< 1800	7000	11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
CHRYSENE	370J	8300	11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
BIS(2-ETHYLHEXYL)PHTHALATE	9500	< 900	< 11000	2800	< 2300	<2000	1800	< 5800	< 3000	< 2700	< 1100
DI-N-OCTYLPHTHALATE	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
BENZO(B)FLUORANTHENE	< 1800	< 900	11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
BENZO(K)FLUORANTHENE	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
BENZO(A)PYRENE	< 1800	330J	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
INDENO(1,2,3-CD)PYRENE	< 1800	280J	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
DIBENZO(A,H)ANTHRACENE	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
BENZO(G,H,I)PERYLENE	< 1800	< 900	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100
CARBAZOLE	< 1800	84J	< 11000	< 1700	< 2300	< 2000	< 1900	< 5800	< 3000	< 2700	< 1100

ALL UNITS UG/KG
J – INDICATES ESTIMATED VALUE

TABLE 6-3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS-08	SS-08D	SS-09	SS-09D	SS-10	MW-2B (4-6')	MW-2C (6-8')	MW-3B (2-4')	MW-3C (4-6')	MW-3CD (4-6')
SEMI-VOLATILE ORGANIC COMPOUNDS										
PHENOL	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
BIS(2-CHLOROETHYL)ETHER	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2-CHLOROPHENOL	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
1,3-DICHLOROBENZENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
1,4-DICHLOROBENZENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
1,2-DICHLOROBENZENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2-METHYLPHENOL	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2,2'-OXYBIS(1-CHLOROPROPANE)	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
4-METHYLPHENOL	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
N-NITROSO-DI-N-PROPYLAMINE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
HEXACHLOROETHANE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
NITROBENZENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
ISOPHORONE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2-NITROPHENOL	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2,4-DIMETHYLPHENOL	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
BIS(2-CHLOROETHOXY)METHANE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2,4-DICHLOROPHENOL	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
1,2,4-TRICHLOROBENZENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
NAPHTHALENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
4-CHLOROANILINE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
HEXACHLOROBUTADIENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
4-CHLORO-3-METHYLPHENOL	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2-METHYLNAPHTHALENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
HEXACHLOROCYCLOPENTADIENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2,4,6-TRICHLOROPHENOL	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2,4,5-TRICHLOROPHENOL	< 5800	< 2700	< 2500	< 2400	< 4100	< 14000	< 30000	< 1900	< 930	< 2400
2-CHLORONAPHTHALENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2-NITROANILINE	< 5800	< 2700	< 2500	< 2400	< 4100	< 14000	< 30000	< 1900	< 930	< 2400
DIMETHYLPHTHALATE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
ACENAPHTHYLENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
2,6-DINITROTOLUENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950
3-NITROANILINE	< 5800	< 2700	< 2500	< 2400	< 4100	< 14000	< 30000	< 1900	< 930	< 2400
ACENAPHTHENE	< 2200	< 1100	< 1000	< 980	< 1800	< 5800	< 12000	< 770	< 370	< 950

ALL UNITS UG/KG

TABLE 6-3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

SEMI-VOLATILE ORGANIC COMPOUNDS	SS-08	SS-08D	SS-09	SS-09D	SS-10	MW-2B (4-6')	MW-2C (6-8')	MW-3B (2-4')	MW-3C (4-6')	MW-3CD (4-6')
2,4-DINITROPHENOL	< 5800	< 2700	< 2500	< 2400	< 4100	< 14000	< 30000	< 1900	< 930	< 2400
DIBENZOFURAN	< 2200	< 1100	< 1000	< 960	< 1600	< 5800	< 12000	< 770	< 370	< 950
4-NITROPHENOL	< 5800	< 2700	< 2500	< 2400	< 4100	< 14000	< 30000	< 1900	< 930	< 2400
2,4-DINITROTOLUENE	< 2200	< 1100	< 1000	< 960	< 1600	< 5800	< 12000	< 770	< 370	< 950
FLUORENE	< 2200	< 1100	< 1000	< 960	< 1600	< 5800	< 12000	< 770	< 370	< 950
DIETHYLPHTHALATE	< 2200	< 1100	< 1000	< 980	< 1600	< 5800	< 12000	< 770	< 370	< 950
4-CHLOROPHENYLPHENYL ETHER	< 2200	< 1100	< 1000	< 960	< 1600	< 5800	< 12000	< 770	< 370	< 950
4-NITROANILINE	< 5800	< 2700	< 2500	< 2400	< 4100	< 14000	< 30000	< 1900	< 930	< 2400
2-METHYL-4,6-DINITROPHENOL	< 5800	< 2700	< 2500	< 2400	< 4100	< 14000	< 30000	< 1900	< 930	< 2400
N-NITROSODIPHENYLAMINE (1)	< 2200	< 1100	< 1000	< 980	< 1600	< 5800	< 12000	< 770	< 370	< 950
4-BROMOPHENYLPHENYL ETHER	< 2200	< 1100	< 1000	< 980	< 1600	< 5800	< 12000	< 770	< 370	< 950
HEXACHLOROBENZENE	< 2200	< 1100	< 1000	< 940	< 1600	< 5800	< 12000	< 770	< 370	< 950
PENTACHLOROPHENOL	< 5800	< 2700	< 2500	< 2400	< 4100	< 14000	< 30000	< 1900	< 930	< 2400
PHENANTHRENE	< 2200	< 1100	6400	3700	14000	8100	< 12000	< 770	< 370	< 950
ANTHRACENE	< 2200	< 1100	< 1000	< 980	2300	< 5800	< 12000	< 770	< 370	< 950
DI-N-BUTYLPHTHALATE	< 2200	< 1100	< 1000	< 940	< 1600	< 5800	< 12000	< 770	< 370	< 950
FLUORANTHENE	< 2200	< 1100	7300	5600	18000	12000	< 12000	< 770	< 370	< 950
PYRENE	< 2200	< 1100	4800	8300	12000	9200	< 12000	< 770	< 370	< 950
BUTYLBENZYLPHTHALATE	< 2200	< 1100	< 1000	< 940	< 1600	< 5800	< 12000	< 770	< 370	< 950
3,3'-DICHLOROBENZIDINE	< 4500	< 2200	< 2000	< 2000	< 3300	< 12000	< 24000	< 1500	< 740	< 1900
BENZO(A)ANTHRACENE	< 2200	< 1100	3100	2600	8400	5600	< 12000	< 770	< 370	< 950
CHRYSENE	< 2200	< 1100	3000	2100	4800	< 5800	< 12000	< 770	< 370	< 950
BIS(2-ETHYLHEXYL)PHTHALATE	< 2200	< 1100	< 1000	2400	11000	< 5800	< 12000	< 770	< 370	< 950
DI-N-OCTYLPHTHALATE	< 2200	< 1100	< 1000	< 940	< 1600	< 5800	< 12000	< 770	< 370	< 950
BENZO(B)FLUORANTHENE	< 2200	< 1100	3200	2100	4400	5800	< 12000	< 770	< 370	< 950
BENZO(K)FLUORANTHENE	< 2200	< 1100	1400	790J	1800	< 5800	< 12000	< 770	< 370	< 950
BENZO(A)PYRENE	< 2200	< 1100	1800	1500	3000	6000	< 12000	< 770	< 370	< 950
INDENO(1,2,3-CD)PYRENE	< 2200	< 1100	< 1000	< 980	1400	< 5800	< 12000	< 770	< 370	< 950
DIBENZO(A,H)ANTHRACENE	< 2200	< 1100	< 1000	< 980	< 1600	< 5800	< 12000	< 770	< 370	< 950
BENZO(G,H,I)PERYLENE	< 2200	< 1100	< 1000	< 940	1100	< 5800	< 12000	< 770	< 370	< 950
CARBAZOLE	< 2200	< 1100	< 1000	< 980	1900	< 5800	< 12000	< 770	< 370	< 950

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 6-3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-01B	SB-02A	SB-02B	SB-03B	SB-04B	SB-05B	SB-06A	SB-06B	SB-07B	SB-08A	SB-08B
	(1-2')	(0-1')	(4-5')	(0-1')	(0-1')	(0-6')	(0-6')	(3.5-4.5')	(3-4')	(0-6')	(4-5')
INORGANICS											
ALUMINUM	14100	8290	3650	17400	11000	14700	14000	3130	14000	5420	3910
ANTIMONY	<7.4	<8.3	<8.2	<7.5	<7.1	<8.8	<5.7	<6.4	<6.6	<4.1	<3.9
ARSENIC	32.8	14.8	6.8	5.6	17.1	9.3	16.8	5350	14.3	12.1	12.4
BARIUM	413	54.4	360	663	327	307	123	402	95.9	65.5	66.1
BERYLLIUM	<0.56	0.83	<0.47	<0.57	<0.54	<0.51	<0.43	<0.48	<0.49	0.34	<0.30
CADMIUM	<1.6	2.2	<1.4	<1.7	21	1.5	22.6	<1.4	<1.4	1.8	1.9
CALCIUM	147000	137000	183000	156000	123000	166000	182000	283000	150000	50000	36600
CHROMIUM	47400	51600	33100	65100	45100	67700	69300	37400	49200	17300	15300
COBALT	4.4	2.7	<1.3	3.9	2.8	3.3	4.9	6.9	<1.4	<0.87	1.3
COPPER	64.6	50.4	68.3	89.9	74.6	65.9	83.7	46.7	83.4	47.7	44.5
IRON	13400	6420	8450	18900	13300	12900	12700	4880	7880	9690	9190
LEAD	1520	1150	481	802	2250	1620	1060	253	22.4	576	281
MAGNESIUM	2240	2900	3910	2560	5550	3280	3850	6570	4720	3420	2430
MANGANESE	320	176	165	274	206	239	280	334	148	131	111
MERCURY	7.4	3.6	0.83	6.1	16.1	<0.13	30	0.84	29.8	4.8	0.27
CKEL	11.3	8.9	4.2	8.9	10.5	9.7	13	<3.2	11	8.4	10.4
OTASSIUM	163	201	119	140	258	182	215	132	288	398	286
ELENIUM	<0.78	0.89	<0.85	1.0	<0.75	<1.7	<0.61	2.4	<0.69	<1.1	<1.0
SILVER	<1.2	<0.85	<0.98	<1.2	6.0	<1.1	<0.91	<1.0	<1.0	<0.65	<0.62
SODIUM	757	489	637	786	581	845	738	809	868	754	287
THALLIUM	<0.56	<0.4	<0.47	<0.57	<0.54	0.72	<0.43	<0.48	<0.49	<0.40	<0.38
VANADIUM	71	111	55.7	78.1	84.2	69.3	148	31.7	99.4	45.8	44.1
ZINC	431	202	424	974	343	391	314	641	230	188	214
CYANIDE	0.73	<0.81	<0.58	<0.71	0.87	<0.84	<0.34	<0.80	<0.82	<0.39	0.48

ALL UNITS IN MG/KG

TABLE 6-3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS-06B	SS-29B	SS-29BD	SS-31B	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07
	(4-5')	(0-1')	(0-1')	(2-3')							
INORGANICS											
ALUMINUM	11000	1750	1610	10800	10200	8230	10200	13800	11800	12900	5900
ANTIMONY	<8.7	<3.8	<4.6	<7.3	<10	<8.6	<8.2	<10.3	<10	<9.6	<9.7
ARSENIC	21.7	4.3	1.3	31	7.3	15.3	7.8	8.3	8.1	4.2	6.7
BARIUM	82.8	135	148	185	413	388	372	181	339	596	218
BERYLLIUM	<0.51	<0.29	<0.35	1	<0.76	<0.5	<0.62	<0.78	<0.76	<0.73	<0.73
CADMIUM	<1.5	1.7	<1	2.7	<2.2	<1.5	<1.8	<2.3	<2.2	<2.1	<2.1
CALCIUM	187000	153000	153000	81400	107000	87900	141000	150000	127000	134000	64900
CHROMIUM	81900	1290	891	59600	40300	30400	47800	48400	43800	48400	21500
COBALT	3.3	5.3	2	5.3	<2.1	<1.4	3.1	<2.2	<2.1	2.9	2.1
COPPER	83	164	175	133	70.5	52.6	59.8	80.1	67.5	68.8	37.4
IRON	8390	8880	5780	11500	12000	9600	13700	12800	17600	14700	6770
LEAD	1280	188	105	678	1050	1480	868	1410	1780	1320	556
MAGNESIUM	3040	30800	32500	3740	3390	1400	2620	4380	2880	4220	2250
MANGANESE	216	121	76.6	137	186	151	225	187	214	211	113
MERCURY	23.4	0.43	0.12	3.7	5.8	8.8	4.5	24.8	18.1	4.6	3.1
NICKEL	11.5	13.6	11.2	18.6	10	5.8	8.9	15.9	8.6	7.7	5
POTASSIUM	188	243	258	534	299	178	114	204	218	166	160
SELENIUM	<1.7	0.5	<0.48	<1.8	<1.1	<0.7	<0.88	<1.1	<1.1	<1	<1
SILVER	<1.1	<0.6	<0.74	2.4	<1.8	<1.1	<1.3	<1.6	<1.6	<1.5	<1.5
SODIUM	678	2320	2680	415	1070	435	900	1280	729	1010	478
THALLIUM	<0.86	<0.29	<0.35	0.99	<0.76	<0.5	<0.82	<0.78	<0.76	<0.73	<0.73
VANADIUM	119	8.6	8.1	103	55	<40.4	61.1	74.1	83	62.2	27.9
ZINC	245	278	221	483	442	297	315	411	401	493	185
CYANIDE	<0.83	<0.38	<0.44	<0.89	1.32	0.90	<0.78	<0.86	<0.85	<0.81	<0.82

ALL UNITS IN MG/KG

MWG13-15_47253

TABLE 6–3
ANALYTICAL RESULTS FOR SOIL/SEDIMENT SAMPLES COLLECTED IN AREA II
FORMER GREISS–PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS–08	SS–08D	SS–09	SS–09D	SS–10	MW–2B	MW–2C	MW–3B	MW–3C	MW–3CD	
						(4–6')	(6–8')	(2–4')	(4–6')	(4–6')	
INORGANICS											
ALUMINUM	12900	12900	5820	6170	13700	4480	913	2040	617	1200	
ANTIMONY	<8.3	<9.1	<3.3	<3.3	<5.4	<5	<6.1	<3.3	<3.3	<4.4	
ARSENIC	9.2	6.5	12.1	8.9	72.7	1210	604	5.7	0.87	5.2	
BARIUM	387	389	215	218	88.5	557	155	13.6	2.3	14.2	
BERYLLIUM	<0.70	<0.68	<0.25	<0.25	<0.41	<0.36	<0.46	<0.25	<0.25	<0.33	
CADMIUM	<2	<2	1.9	2	1.7	2.9	<1.3	<0.72	<0.72	<0.97	
CALCIUM	140000	138000	84800	84000	123000	175000	125000	18300	12800	19000	
CHROMIUM	44900	44800	19800	20800	60000	20400	20800	263	28.6	390	
COBALT	<2	<1.9	4.5	4.3	3.9	<1.1	<1.3	2.4	0.92	1.6	
COPPER	69.7	74.4	161	157	89.1	54.1	92	4.8	2.2	5.8	
IRON	13800	14100	33300	33100	17000	8540	5570	5370	2200.	8420	
LEAD	1460	1430	1170	1100	1800	595	187	18.6	1.9	19.7	
MAGNESIUM	1830	3930	4390	4200	3480	4400	4160	10600	6570	6750	
MANGANESE	261	261	270	275	210	187	252	119	77.6	185	
MERCURY	8.2	6	3.8	5.3	31.8	3.6	111	0.13	<0.06	0.16	
NICKEL	9.1	7.6	21.8	21	16.7	5.5	4.8	3.2	<1.8	2.4	
POTASSIUM	244	280	281	299	185	231	142	177	83.7	173	
SELENIUM	<0.99	<0.96	0.38	<0.35	<0.58	<0.53	<0.65	<0.35	<0.35	<0.47	
SILVER	<1.5	<1.4	<0.53	<0.53	<0.87	<0.78	<0.97	<0.52	<0.52	<0.70	
SODIUM	852	1040	628	554	1120	605	708	211	135	252	
THALLIUM	1	<0.69	0.25	<0.25	0.7	<0.38	1.3	<0.25	0.68	<0.33	
VANADIUM	57.6	58.8	34.8	36.2	109	48.7	23.7	8.9	4.3	6.8	
ZINC	336	351	472	526	319	389	175	35	17.5	30.4	
CYANIDE	<0.98	<0.96	<0.31	<0.32	<0.52	0.53	0.74	<0.31	<0.31	<0.42	

ALL UNITS MG/KG

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-10A	SB-10B	SB-11A	SB-11B	SB-11BD	SB-12A	SB-13B	SB-14B	SB-15A	SB-15B	SB-16B
	(0-1')	(2-4')	(0-1')	(2-4')	(2-4')	(0-2')	(2-4')	(2-4')	(0-1')	(2-4')	(2-4')
INORGANICS											
ALUMINUM	1020	4180	11100	2510	1020	6080	2450	6330	7350	2700	3550
ANTIMONY	<2.8	<3.1	<3.8	<3.7	<3.6	<3.9	<3.7	15.8	14.2	<3.2	<4.5
ARSENIC	3.8	5.8	4.8	1.9	1.3	6.4	5.3	7.9	13.4	3.6	9.7
BARIUM	7.5	40.5	431	24.7	6.8	1570	45.5	161	371	46.1	179
BERYLLIUM	<0.21	<0.24	0.6	0.28	<0.29	0.33	0.47	0.34	<0.29	0.34	0.34
CADMIUM	<0.61	<0.69	8	<0.82	<0.84	29.9	1.9	37.3	17.1	<0.71	2.8
CALCIUM	30200	68500	20200	14400	10800	48500	19200	75800	168000	16900	27800
CHROMIUM	38.6	58.8	838	57.9	15.7	7180	283	1080	4010	80.9	1330
COBALT	1.6	6.3	67.7	3.6	4.2	325	4.3	352	37.9	2.8	3.2
COPPER	8.7	25.3	437	21.8	6.2	986	114	1840	3490	270	103
IRON	3580	8710	20600	5340	3310	31800	6830	105000	13800	7290	12100
LEAD	4.1	23.8	277	26.2	39.5	4250	24.8	220	4120	1610	86.4
MAGNESIUM	18000	40300	6450	6900	5920	6730	8410	4710	7580	6380	12500
MANGANESE	183	378	484	86.5	83.4	340	116	880	243	118	138
MERCURY	<0.05	<0.06	1.0	4.5	<0.07	8.4	1.2	28.6	2	0.1	4
NICKEL	4.8	6.6	29.5	8.4	2.9	43.7	15.4	63	34.3	5.9	11
POTASSIUM	173	622	1870	338	118	481	296	583	345	389	348
SELENIUM	<0.30	<0.33	<0.40	<0.98	<0.41	0.72	<0.39	8.5	3.9	<0.34	<0.48
SILVER	<0.44	<0.50	47.3	<0.59	<0.61	128	<0.56	129	62.3	<0.52	<0.72
SODIUM	124	263	425	228	153	387	249	1120	839	239	415
THALLIUM	<0.21	<0.24	<0.29	<0.37	<0.29	<0.30	<0.28	<0.29	0.7	<0.25	<0.34
VANADIUM	6.3	13.6	30.3	10.2	8	34	10.2	29.6	31.3	11.3	15.4
ZINC	27.9	88.3	813	127	41.6	852	119	740	2320	173	188
CYANIDE	<0.28	<0.30	<0.38	<0.32	<0.36	<0.37	0.48	1.06	0.44	<0.31	0.88

ALL UNITS MG/KG

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-17B	SB-18B	SB-19A	SB-19B	SB-20B	SB-21A	SB-21B	SB-22B	SB-23B	SB-24A	SB-24B
	(2-4')	(1.5-3.5')	(0-1')	(2-3')	(2-4')	(0-1')	(2-4')	(2-4')	(8-10')	(0-6")	(3-4')
INORGANICS											
ALUMINUM	4150	11900	7940	801	69300	120000	799	10400	3780	3950	16900
ANTIMONY	<4.2	<4.1	9.1	<4.1	<3.9	<4.3	<3.1	<3.6	<5.0	<3.4	<3.6
ARSENIC	13.6	20.5	5.8	3.5	32.7	29.3	<0.28	20.8	12.6	152	164
BARIUM	2140	104	897	14	189	203	2.9	167	392	198	323
BERYLLIUM	0.96	3	0.51	<0.31	0.65	0.71	<0.24	<0.27	<0.38	0.9	1.2
CADMIUM	2.1	3.1	42.9	<0.9	9	54.8	<0.68	12.8	1.4	21.7	11
CALCIUM	11000	30100	141000	17000	50900	13800	14400	79200	157000	40400	23400
CHROMIUM	1950	181	1480	158	11900	6900	30.2	12400	23500	8570	3830
COBALT	56.9	8.7	83	<0.87	2.5	3.8	0.8	1.4	<1.1	7.8	8.8
COPPER	134	146	1130	12.9	1030	1530	[illegible]	203	63.8	120	488
IRON	20600	22400	78100	4290	9050	11100	2340	11200	7350	20200	17800
LEAD	394	30.9	884	4.5	399	569	3.7	425	400	538	333
MAGNESIUM	1170	1900	5010	9330	3750	2713	8200	6240	7470	2450	1530
MANGANESE	171	342	738	100	680	1100	72.4	229	198	152	397
MERCURY	3.3	0.35	4.3	<0.09	2	3.1	0.61	6.9	2.2	1.1	1.3
NICKEL	47	32.4	113	<2	30.1	52.1	2.2	15.3	8.1	18.8	33.9
POTASSIUM	449	1080	853	100	–333	225	85.2	290	230	836	920
SELENIUM	1.7	0.53	<0.51	<0.43	1.4	4.8	<0.8	0.96	0.54	1.8	1.4
SILVER	4.3	<0.65	95.8	<0.65	<0.82	<0.68	<0.49	<0.67	<0.79	<0.54	<0.58
SODIUM	404	738	1850	180	417	342	214	507	848	280	327
THALLIUM	<0.32	<0.31	<0.37	<0.31	<0.59	<0.42	<0.31	<0.34	<0.38	0.35	0.3
VANADIUM	23.8	29.9	38.4	10.4	51.5	43.1	9.9	42.9	63.8	34.7	35
ZINC	322	758	1580	35.7	509	757	92.5	322	659	825	840
CYANIDE	0 48	<0.39	<0.48	<0.39	0.59	1.23	<0.29	<0.34	<0.47	<0.32	<0.34

ALL UNITS IN MG/KG

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-25B (3.5-4.5')	SB-26B (3-4')	SB-27A (0-1')	SB-27B (2-3')	SB-29B (1-2')	SB-29BD (1-2')	PW-1	PW-2	PW-3	PW-4	PW-5
INORGANICS											
ALUMINUM	29700	1990	2410	5120	3960	3260	1230	2030	37.2	6850	3680
ANTIMONY	<4	<3	<3.3	<3.8	<4.3	<5.2	< 3.8	< 3.8	< 6.8	4340	< 7.3
ARSENIC	7.1	2.7	3.4	12	17.2	15.7	1.2	1.9	< 0.72	8.8	2.4
BARIUM	114	19.4	990	88.3	103	145	101	361	11.1	3320	12
BERYLLIUM	6.6	<0.23	0.37	1.1	0.88	0.99	< 0.26	< 0.29	< 0.31	< 0.3	< 0.35
CADMIUM	1.9	<0.67	<0.72	0.9	1.5	1.7	1.6	11.7	< 1.6	< 6.8	2
CALCIUM	37100	16100	4980	4520	7370	7130	18800	248000	842	14400	1710
CHROMIUM	819	21.6	121	19.7	829	817	187	1010	15.2	83100	22100
COBALT	6.2	2.1	2.7	2.3	3	3.2	33.5	855	2.6	80.8	< 1.6
COPPER	148	16	22.3	21.2	32.7	40.4	81.6	206	9.1	250	35.4
IRON	27700	9740	17300	42800	11900	14300	11900	7800	17700	18100	5250
LEAD	50.2	13.2	14.9	11.7	183	208	88.5	238	787	75800	72
MAGNESIUM	863	8430	945	413	1090	1140	6230	8110	146	280	242
MANGANESE	249	118	113	85.7	96.8	126	71.3	215	85.6	1370	53.7
MERCURY	0.6	0.07	<0.06	6.8	0.3	<0.1	0.74	1.6	< 0.13	9	1.1
NICKEL	24.3	2.9	10.8	9	11.1	14.8	3.1	17.8	5.8	18.3	< 3.7
POTASSIUM	2200	267	378	1050	374	427	8180	182	2170	763	80.7
SELENIUM	0.79	<0.78	<0.85	1.6	3	4.9	0.88	6.2	< 0.72	2.7	< 0.78
SILVER	<0.63	<0.46	<0.52	<0.61	<0.68	<0.83	6.6	40.7	1.7	51.3	2.3
SODIUM	2700	170	398	815	618	478	32000	321	380000	387	418
THALLIUM	<0.3	<0.3	<0.32	<0.38	<0.42	<0.51	< 0.28	< 0.29	< 0.31	< 1.5	< 0.35
VANADIUM	53.3	11.1	10.6	47.4	23.3	30	3.7	7	< 0.87	33.7	35.2
ZINC	214	68.7	74.7	76.4	236	177	482	1360	18.7	354	57.1
CYANIDE	0.65	<0.29	<0.31	<0.36	0.75	0.85	1.12	< 0.36	0.87	8.13	< 0.69

ALL UNITS IN MG/KG

MWG13-15_47257

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	PW-6	PW-7	PW-8	PW-9	MW-6A (2-4')	MW-6B (4-6')
INORGANICS						
ALUMINUM	474	1110	2850	108	84300	2350
ANTIMONY	< 3.8	< 3.3	< 3	< 3.2	<4.7	<4.1
ARSENIC	1.7	1.3	23.7	< 0.34	6.8	6.1
BARIUM	4840	14.2	64.4	0.74	182	13.8
BERYLLIUM	< 0.29	< 0.25	< 0.23	< 0.25	0.71	<0.31
CADMIUM	< 0.85	< 0.73	6	< 0.71	8.3	<0.89
CALCIUM	3100	1650	34400	10400	82700	28300
CHROMIUM	49.5	28.1	64.8	10800	11500	78.8
COBALT	2.2	1.8	9.6	< 0.89	10.7	<0.86
COPPER	12.6	5	335	24.3	1340	34.7
IRON	15000	2040	89200	2710	12100	5110
LEAD	27.8	6.5	848	37.4	792	23.7
MAGNESIUM	255	185	18400	21.7	9010	15000
MANGANESE	89.7	40	918	4	984	138
MERCURY	0.09	< 0.06	0.09	0.23	2.8	0.91
NICKEL	2	503	103	< 1.8	45.3	4.3
POTASSIUM	158	288	418	32.2	1380	141
SELENIUM	0.44	0.35	< 0.32	< 0.34	1.8	<0.43
SILVER	< 0.61	< 0.53	< 0.48	< 0.52	<0.75	<0.85
SODIUM	104	211	352	204	1040	289
THALLIUM	< 0.29	< 0.25	< 0.23	< 0.25	<0.36	<0.31
VANADIUM	2.8	6.3	10.8	17.8	48.1	8.2
ZINC	777	83	1390	8.1	934	34.7
CYANIDE	< 0.36	0.37	< 0.29	< 0.31	<0.44	<0.38

ALL UNITS IN MG/KG

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-10A	SB-10B	SB-11A	SB-11B	SB-11BD	SB-12A	SB-13B	SB-14B	SB-15A	SB-15B	SB-16B
	(0-1')	(2-4')	(0-1')	(2-4')	(2-4')	(0-2')	(2-4')	(2-4')	(0-1')	(2-4')	(2-4')
VOLATILE ORGANICS											
CHLOROMETHANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
BROMOMETHANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
VINYL CHLORIDE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
CHLOROETHANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
METHYLENE CHLORIDE	< 11	< 12	< 14	< 13	< 15	< 15	23	< 14	< 14	< 12	< 17
ACETONE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 58	< 14	< 12	< 17
CARBON DISULFIDE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
1,1-DICHLOROETHENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
1,1-DICHLOROETHANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
TRANS-1,2-DICHLOROETHENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
CHLOROFORM	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
1,2-DICHLOROETHANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
2-BUTANONE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	12J	< 14	< 12	< 17
1,1,1-TRICHLOROETHANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
CARBON TETRACHLORIDE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
BROMODICHLOROMETHANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
1,2-DICHLOROPROPANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
CIS-1,3-DICHLOROPROPENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
TRICHLOROETHENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
DIBROMOCHLOROMETHANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
1,1,2-TRICHLOROETHANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
BENZENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
TRANS-1,3-DICHLOROPROPENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
BROMOFORM	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
4-METHYL-2-PENTANONE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
2-HEXANONE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
TETRACHLOROETHENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
1,1,2,2-TETRACHLOROETHANE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
TOLUENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
CHLOROBENZENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
ETHYLBENZENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
STYRENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
XYLENES (TOTAL)	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17
CIS-1,2-DICHLOROETHENE	< 11	< 12	< 14	< 13	< 15	< 15	< 14	< 14	< 14	< 12	< 17

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE
QUANTITATION LIMITS FOR ACETONE HAVE BEEN ADJUSTED TO REFLECT LABORATORY, FIELD, AND TRIP BLANKS.

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-17B	SB-18B	SB-19A	SB-19B	SB-20B	SB-21A	SB-21B	SB-22B	SB-23B	SB-24A	SB-24B
	(2-4')	(1.5-3.5')	(0-1')	(2-3')	(2-4')	(0-1')	(2-4')	(2-6')	(9-10')	(0-8')	(3-4')
VOLATILE ORGANICS											
CHLOROMETHANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
BROMOMETHANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
VINYL CHLORIDE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
CHLOROETHANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
METHYLENE CHLORIDE	< 16	< 15	< 18	< 16	< 15	< 17	< 12	< 14	< 19	< 13	< 14
ACETONE	< 16	< 17	310	< 54	< 16	< 68	< 47	< 14	< 19	< 13	< 14
CARBON DISULFIDE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
1,1-DICHLOROETHENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
1,1-DICHLOROETHANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
TRANS-1,2-DICHLOROETHENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
CHLOROFORM	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
1,2-DICHLOROETHANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
2-BUTANONE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
1,1,1-TRICHLOROETHANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
CARBON TETRACHLORIDE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
BROMODICHLOROMETHANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
1,2-DICHLOROPROPANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
CIS-1,3-DICHLOROPROPENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
TRICHLOROETHENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
DIBROMOCHLOROMETHANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
1,1,2-TRICHLOROETHANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
BENZENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
TRANS-1,3-DICHLOROPROPENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
BROMOFORM	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
4-METHYL-2-PENTANONE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
2-HEXANONE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
TETRACHLOROETHENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
1,1,2,2-TETRACHLOROETHANE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
TOLUENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
CHLOROBENZENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
ETHYLBENZENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
STYRENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
XYLENES (TOTAL)	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14
CIS-1,2-DICHLOROETHENE	< 16	< 15	< 18	< 16	< 15	< 18	< 12	< 14	< 19	< 13	< 14

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE
QUANTITATION LIMITS FOR ACETONE HAVE BEEN ADJUSTED TO REFLECT LABORATORY, FIELD, AND TRIP BLANKS.

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS-25S (3.5-4.5')	SS-26S (3-4')	SS-27A (0-1')	SS-27S (2-3')	SS-28S (1-2')	SS-28SD (1-2')	PW-1	PW-2	PW-3	PW-4	PW-5
VOLATILE ORGANICS											
CHLOROMETHANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
BROMOMETHANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
VINYL CHLORIDE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
CHLOROETHANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
METHYLENE CHLORIDE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
ACETONE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	180J	< 28
CARBON DISULFIDE	< 15	< 11	< 12	< 21	< 23	< 20	< 14	< 15	< 33	2000	< 28
1,1-DICHLOROETHENE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
1,1-DICHLOROETHANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
TRANS-1,2-DICHLOROETHENE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
CHLOROFORM	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
1,2-DICHLOROETHANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
2-BUTANONE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
1,1,1-TRICHLOROETHANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
CARBON TETRACHLORIDE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
BROMODICHLOROMETHANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
1,2-DICHLOROPROPANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
CIS-1,3-DICHLOROPROPENE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
TRICHLOROETHENE	< 15	< 11	< 12	< 15	< 16	14J	< 14	< 15	< 28	< 1000	< 28
DIBROMOCHLOROMETHANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
1,1,2-TRICHLOROETHANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
BENZENE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
TRANS-1,3-DICHLOROPROPENE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
BROMOFORM	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
4-METHYL-2-PENTANONE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
2-HEXANONE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
TETRACHLOROETHENE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
1,1,2,2-TETRACHLOROETHANE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
TOLUENE	< 15	< 11	< 12	8J	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
CHLOROBENZENE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
ETHYLBENZENE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
STYRENE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
XYLENES (TOTAL)	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28
CIS-1,2-DICHLOROETHENE	< 15	< 11	< 12	< 15	< 16	< 20	< 14	< 15	< 28	< 1000	< 28

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE
QUANTITATION LIMITS FOR ACETONE HAVE BEEN ADJUSTED TO REFLECT LABORATORY, FIELD, AND TRIP BLANKS.

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	PW-6	PW-7	PW-8	PW-9	MW-6A	MW-6B					
					(2-4')	(4-6')					
VOLATILE ORGANICS											
CHLOROMETHANE	< 15	< 13	< 11	< 12	< 18	< 15					
BROMOMETHANE	< 15	< 13	< 11	< 12	< 18	< 15					
VINYL CHLORIDE	< 18	< 13	< 11	< 12	< 18	< 15					
CHLOROETHANE	< 15	< 13	< 11	< 12	< 18	< 15					
METHYLENE CHLORIDE	< 15	18	6J	< 12	< 18	< 15					
ACETONE	< 150	< 13	< 11	< 68	< 18	<17					
CARBON DISULFIDE	< 15	< 13	< 11	< 12	< 18	< 15					
1,1-DICHLOROETHENE	< 15	< 13	< 11	< 12	< 18	< 15					
1,1-DICHLOROETHANE	< 15	< 13	< 11	< 12	< 18	< 15					
TRANS-1,2-DICHLOROETHENE	< 15	< 13	< 11	< 12	< 18	< 15					
CHLOROFORM	< 15	< 13	< 11	< 12	< 18	< 15					
1,2-DICHLOROETHANE	< 15	< 13	< 11	< 12	< 18	< 15					
2-BUTANONE	< 15	< 13	< 11	< 12	< 18	< 15					
1,1,1-TRICHLOROETHANE	< 15	< 13	< 11	< 12	< 18	< 15					
CARBON TETRACHLORIDE	< 15	< 13	< 11	< 12	< 18	< 15					
BROMODICHLOROMETHANE	< 15	< 13	< 11	< 12	< 18	< 15					
1,2-DICHLOROPROPANE	< 15	< 13	< 11	< 12	< 18	< 15					
CIS-1,3-DICHLOROPROPENE	< 15	< 13	< 11	< 12	< 18	< 15					
TRICHLOROETHENE	< 15	< 13	< 11	< 12	< 18	< 15					
DIBROMOCHLOROMETHANE	< 15	< 13	< 11	< 12	< 18	< 15					
1,1,2-TRICHLOROETHANE	< 15	< 13	< 11	< 12	< 18	< 15					
BENZENE	< 15	< 13	< 11	< 12	< 18	< 15					
TRANS-1,3-DICHLOROPROPENE	< 15	< 13	< 11	< 12	< 18	< 15					
BROMOFORM	< 15	< 13	< 11	< 12	< 18	< 15					
4-METHYL-2-PENTANONE	< 15	< 13	< 11	< 12	< 18	< 15					
2-HEXANONE	< 15	< 13	< 11	< 12	< 18	< 15					
TETRACHLOROETHENE	< 15	< 13	< 11	< 12	< 18	< 15					
1,1,2,2-TETRACHLOROETHANE	< 15	< 13	< 11	< 12	< 18	< 15					
TOLUENE	< 15	< 13	< 11	< 12	< 18	< 15					
CHLOROBENZENE	< 15	< 13	< 11	< 12	< 18	< 15					
ETHYLBENZENE	< 15	< 13	< 11	< 12	< 18	< 15					
STYRENE	< 15	< 13	< 11	< 12	< 18	< 15					
XYLENES (TOTAL)	< 15	< 13	< 11	< 12	< 18	< 15					
CIS-1,2-DICHLOROETHENE	< 15	< 13	< 11	< 12	< 18	< 15					

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE
QUANTITATION LIMITS FOR ACETONE HAVE BEEN ADJUSTED TO REFLECT LABORATORY, FIELD, AND TRIP BLANKS.

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-10A (0-1')	SB-10B (2-4')	SB-11A (0-1')	SB-11B (2-4')	SB-11BD (2-4')	SB-12A (0-2')	SB-13B (2-4')	SB-14B (2-4')	SB-15A (0-1')	SB-15B (2-4')	SB-16B (2-4')
SEMI-VOLATILE ORGANIC COMPOUNDS											
PHENOL	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
BIS(2-CHLOROETHYL)ETHER	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
2-CHLOROPHENOL	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
1,3-DICHLOROBENZENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
1,4-DICHLOROBENZENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
1,2-DICHLOROBENZENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
2-METHYLPHENOL	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
2,2'-OXYBIS(1-CHLOROPROPANE)	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
4-METHYLPHENOL	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
N-NITROSO-DI-N-PROPYLAMINE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
HEXACHLOROETHANE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
NITROBENZENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
ISOPHORONE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
2-NITROPHENOL	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
2,4-DIMETHYLPHENOL	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
BIS(2-CHLOROETHOXY)METHANE	< 630	< 720	< 900	< 800	< 880	< 450	< 4[illegible]	< 450	< 8900	< 390	< 530
2,4-DICHLOROPHENOL	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
1,2,4-TRICHLOROBENZENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
NAPHTHALENE	< 630	< 720	< 900	< 800	< 880	240J	85J	< 450	< 8900	< 390	< 530
4-CHLOROANILINE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
HEXACHLOROBUTADIENE	< 630	< 720	< 900	< 800	< 880	< 460	< 420	< 450	< 8900	< 390	< 530
4-CHLORO-3-METHYLPHENOL	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
2-METHYLNAPHTHALENE	< 630	< 720	< 900	< 800	< 880	84J	120J	< 450	< 8900	< 390	< 530
HEXACHLOROCYCLOPENTADIENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
2,4,6-TRICHLOROPHENOL	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
2,4,5-TRICHLOROPHENOL	< 1600	< 1800	< 2200	< 2000	< 2200	< 1100	< 1000	< 1100	< 22000	< 970	< 1300
2-CHLORONAPHTHALENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
2-NITROANILINE	< 1600	< 1800	< 2200	< 2000	< 2200	< 1100	< 1000	< 1100	< 22000	< 970	< 1300
DIMETHYLPHTHALATE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8800	< 390	< 530
ACENAPHTHYLENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
2,6-DINITROTOLUENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8800	< 390	< 530
3-NITROANILINE	< 1600	< 1800	< 2200	< 2000	< 2200	< 1100	< 1000	< 1100	< 22000	< 970	< 1300
ACENAPHTHENE	< 630	< 720	< 900	< 800	< 880	500	82J	< 430	< 8900	< 390	< 530

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-10A	SB-10B	SB-11A	SB-11B	SB-11BD	SB-12A	SB-13B	SB-14B	SB-15A	SB-15B	SB-16B
	(0-1')	(2-4')	(0-1')	(2-4')	(2-4')	(0-2')	(2-4')	(2-4')	(0-1')	(2-4')	(2-4')
SEMI-VOLATILE ORGANIC COMPOUNDS											
2,4-DINITROPHENOL	< 1600	< 1600	< 2200	< 2000	< 2200	< 1100	< 1000	< 1100	< 22000	< 970	< 1300
DIBENZOFURAN	< 630	< 720	< 900	< 800	< 880	810	81	< 450	< 8900	< 390	< 530
4-NITROPHENOL	< 1600	< 1800	< 2200	< 2000	< 2200	< 1100	< 1000	< 1100	< 22000	< 970	< 1300
2,4-DINITROTOLUENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
FLUORENE	< 630	< 720	< 900	< 800	< 880	870	130J	< 450	< 8900	< 390	< 530
DIETHYLPHTHALATE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
4-CHLOROPHENYLPHENYL ETHER	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
4-NITROANILINE	< 1600	< 1800	< 2200	< 2000	< 2200	< 1100	< 1000	< 1100	< 22000	< 970	< 1300
2-METHYL-4,6-DINITROPHENOL	< 1600	< 1800	< 2200	< 2000	< 2200	< 1100	< 1000	< 1100	< 22000	< 970	< 1300
N-NITROSODIPHENYLAMINE (1)	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
4-BROMOPHENYLPHENYL ETHER	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
HEXACHLOROBENZENE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
PENTACHLOROPHENOL	< 1600	< 1800	< 2200	< 2000	< 2200	< 1100	< 1000	< 1100	< 22000	< 970	< 1300
PHENANTHRENE	< 630	1300	1300	< 800	800J	11000	1700	150J	87000	590	260J
ANTHRACENE	< 630	330J	500J	250J	140J	2000	380J	< 450	15000	< 390	390J
DI-N-BUTYLPHTHALATE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
FLUORANTHENE	< 630	170C	1900	< 800	810	12000	1900	220J	71000	820	670
PYRENE	< 630	1100	1400	120J	840J	6900	1300	140J	45000	780	820
BUTYLBENZYLPHTHALATE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
3,3'-DICHLOROBENZIDINE	< 1300	< 1400	< 1800	< 1800	< 1800	< 890	< 830	< 900	< 18000	< 780	< 1100
BENZO(A)ANTHRACENE	< 630	1100	890J	< 800	540J	4900	1000	110J	28000	430	280J
CHRYSENE	< 630	920	870	< 800	670J	2900	920	87J	30000	390	330J
BIS(2-ETHYLHEXYL)PHTHALATE	< 630	< 720	< 900	210J	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
DI-N-OCTYLPHTHALATE	< 630	< 720	< 900	< 800	< 880	< 450	< 420	< 450	< 8900	< 390	< 530
BENZO(B)FLUORANTHENE	< 630	1200	1300	< 800	840J	6900	1600	210J	37000	500	290J
BENZO(K)FLUORANTHENE	< 630	610J	300J	< 800	380J	2200	< 70J	< 450	10000	< 390	110J
BENZO(A)PYRENE	< 630	420J	< 900	< 800	< 880	1300	610	59J	9300	< 390	130J
INDENO(1,2,3-CD)PYRENE	< 630	< 720	< 900	< 800	< 880	< 700	< 420	< 450	< 8900	< 390	< 530
DIBENZO(A,H)ANTHRACENE	< 630	< 720	< 900	< 800	< 880	110J	< 420	< 450	< 8900	< 390	< 530
BENZO(G,H,I)PERYLENE	< 630	< 720	< 900	< 800	130J	310J	130J	< 450	< 8900	< 390	< 530
CARBAZOLE	< 630	< 720	< 900	< 800	< 880	880	180J	< 450	< 8900	< 390	< 530

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

MWG13-15_47264

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-25B	SB-26B	SB-27A	SB-27B	SB-28B	SB-28BD	PW-1	PW-2	PW-3	PW-4	PW-5
	(3.5-4.5')	(3-4')	(0-1')	(2-3')	(1-2')	(1-2')					
SEMI-VOLATILE ORGANIC COMPOUNDS											
PHENOL	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 1200	< 880
BIS(2-CHLOROETHYL)ETHER	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2-CHLOROPHENOL	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
1,3-DICHLOROBENZENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
1,4-DICHLOROBENZENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
1,2-DICHLOROBENZENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2-METHYLPHENOL	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2,2'-OXYBIS(1-CHLOROPROPANE)	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
4-METHYLPHENOL	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 8300	< 880
N-NITROSO-DI-N-PROPYLAMINE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
HEXACHLOROETHANE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
NITROBENZENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
ISOPHORONE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2-NITROPHENOL	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2,4-DIMETHYLPHENOL	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 3400	< 900
BIS(2-CHLOROETHOXY)METHANE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2,4-DICHLOROPHENOL	< 960	< 3300	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
1,2,4-TRICHLOROBENZENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
NAPHTHALENE	< 960	1800J	< 800	< 430	370J	250J	< 920	< 460	< 830	< 930	< 880
4-CHLOROANILINE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
HEXACHLOROBUTADIENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
4-CHLORO-3-METHYLPHENOL	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2-METHYLNAPHTHALENE	< 960	600J	< 800	580	140J	250J	< 920	< 460	< 830	< 930	< 880
HEXACHLOROCYCLOPENTADIENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2,4,6-TRICHLOROPHENOL	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2,4,5-TRICHLOROPHENOL	< 2400	< 9100	< 2000	< 1100	< 2800	< 3100	< 2300	< 1200	< 2100	< 2300	< 2200
2-CHLORONAPHTHALENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2-NITROANILINE	< 2400	< 9100	< 2000	< 1100	< 2800	< 3100	< 2300	< 1200	< 2100	< 2300	< 2200
DIMETHYLPHTHALATE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 6100	< 460	< 830	< 930	< 880
ACENAPHTHYLENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
2,6-DINITROTOLUENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
3-NITROANILINE	< 2400	< 9100	< 2000	< 1100	< 2800	< 3100	< 2300	< 1200	< 2100	< 2300	< 2200
ACENAPHTHENE	< 960	1400J	< 800	< 430	410J	250J	< 920	< 460	< 830	< 930	< 880

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-25B	SB-26B	SB-27A	SB-27B	SB-28B	SB-28BD	PW-1	PW-2	PW-3	PW-4	PW-5
	(3.5-4.5')	(3-4')	(0-1')	(2-3')	(1-2')	(1-2')					
SEMI-VOLATILE ORGANIC COMPOUNDS											
2,4-DINITROPHENOL	< 2400	< 9100	< 2000	< 1100	< 2900	< 3100	< 2300	< 1200	< 2100	< 2300	< 2200
DIBENZOFURAN	< 960	1500J	< 800	< 430	290J	310J	< 920	< 460	< 830	< 930	< 880
4-NITROPHENOL	< 2400	< 9100	< 2000	< 1100	< 2900	< 3100	< 2300	< 1200	< 2100	< 2300	< 2200
2,4-DINITROTOLUENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
FLUORENE	< 960	2100J	< 800	< 430	480J	380J	< 920	< 460	< 830	< 930	< 880
DIETHYLPHTHALATE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
4-CHLOROPHENYLPHENYL ETHER	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
4-NITROANILINE	< 2400	< 9100	< 2000	< 430	< 2900	< 3100	< 2300	< 1200	< 2100	< 2300	< 2200
2-METHYL-4,6-DINITROPHENOL	< 2400	< 9100	< 2000	< 1100	< 2900	< 3100	< 2300	< 1200	< 2100	< 2300	< 2200
N-NITROSODIPHENYLAMINE (1)	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 8[illegible]
4-BROMOPHENYLPHENYL ETHER	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
HEXACHLOROBENZENE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
PENTACHLOROPHENOL	< 2400	< 9100	< 2000	< 1100	< 2900	< 3100	< 2300	< 1200	< 2100	< 2300	< 2200
PHENANTHRENE	< 960	16000	< 800	1100	7900	5100	< 920	< 460	< 830	< 930	< 880
ANTHRACENE	< 960	3300J	< 800	< 430	1100	890J	< 920	< 460	< 830	< 930	< 880
DI-N-BUTYLPHTHALATE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
FLUORANTHENE	< 960	20000	< 800	< 430	8400	5300	< 920	< 460	< 830	< 930	< 880
PYRENE	< 960	11000	< 800	< 430	3300	4200	< 920	< 460	< 830	< 930	< 880
BUTYLBENZYLPHTHALATE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
3,3'-DICHLOROBENZIDINE	< 1900	< 7300	< 1600	< 430	< 2100	< 2500	< 1800	< 930	< 1700	< 1900	< 1800
BENZO(A)ANTHRACENE	< 960	8200	< 800	< 430	3600	1900	< 920	< 460	< 830	< 930	< 880
CHRYSENE	< 960	8400	< 800	< 430	3100	250J	< 920	< 460	< 830	< 930	< 880
BIS(2-ETHYLHEXYL)PHTHALATE	< 960	< 3800	< 800	< 430	< 1000	130J	< 920	< 460	< 830	< 930	< 880
DI-N-OCTYLPHTHALATE	< 960	< 3800	< 800	< 430	< 1000	< 1300	< 920	< 460	< 830	< 930	< 880
BENZO(B)FLUORANTHENE	< 960	6800	< 800	< 430	3300	2200	< 920	< 460	< 830	< 930	< 880
BENZO(K)FLUORANTHENE	< 960	5200	< 800	< 430	1700	< 1800	< 920	< 460	< 830	< 930	< 880
BENZO(A)PYRENE	< 960	4500	< 800	< 430	1300	310J	< 920	< 460	< 830	< 930	< 880
INDENO(1,2,3-CD)PYRENE	< 960	5000	< 800	< 430	< 1000	1100J	< 920	< 460	< 830	< 930	< 880
DIBENZO(A,H)ANTHRACENE	< 960	< 3800	< 800	< 430	350J	290J	< 920	< 460	< 830	< 930	< 880
BENZO(G,H,I)PERYLENE	< 960	4800	< 800	< 430	450J	560J	< 920	< 460	< 830	< 930	< 880
CARBAZOLE	< 960	2000J	< 800	< 430	420J	440J	< 920	< 460	< 830	< 930	< 880

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-17B	SB-18B	SB-19A	SB-19B	SB-20B	SB-21A	SB-21B	SB-22B	SB-23B	SB-24A	SB-24B
	(2-4')	(1.5-3.5')	(0-1')	(2-3')	(2-4')	(0-1')	(2-4')	(2-4')	(9-10')	(0-2')	(2-4')
SEMI-VOLATILE ORGANIC COMPOUNDS											
PHENOL	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
BIS(2-CHLOROETHYL)ETHER	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2-CHLOROPHENOL	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
1,3-DICHLOROBENZENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
1,4-DICHLOROBENZENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
1,2-DICHLOROBENZENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2-METHYLPHENOL	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2,2'-OXYBIS(1-CHLOROPROPANE)	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
4-METHYLPHENOL	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
N-NITROSO-DI-N-PROPYLAMINE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
HEXACHLOROETHANE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
NITROBENZENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
ISOPHORONE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2-NITROPHENOL	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2,4-DIMETHYLPHENOL	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
BIS(2-CHLOROETHOXY)METHANE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2,4-DICHLOROPHENOL	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
1,2,4-TRICHLOROBENZENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
NAPHTHALENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
4-CHLOROANILINE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
HEXACHLOROBUTADIENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
4-CHLORO-3-METHYLPHENOL	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2-METHYLNAPHTHALENE	< 1000	< 930	< 580	< 480	< 940	< 1000	58J	< 400	< 1200	< 800	< 890
HEXACHLOROCYCLOPENTADIENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2,4,6-TRICHLOROPHENOL	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2,4,5-TRICHLOROPHENOL	< 2500	< 2300	< 1400	< 1200	< 2300	< 2500	< 920	< 1000	< 2900	< 2000	< 2200
2-CHLORONAPHTHALENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2-NITROANILINE	< 2500	< 2300	< 1400	< 1200	< 2300	< 2500	< 920	< 1000	< 2900	< 2000	< 2200
DIMETHYLPHTHALATE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
ACENAPHTHYLENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
2,6-DINITROTOLUENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
3-NITROANILINE	< 2500	< 2300	< 1400	< 1200	< 2300	< 2500	< 920	< 1000	< 2900	< 2000	< 2200
ACENAPHTHENE	< 1000	< 930	< 580	< 480	120J	< 1000	< 370	< 400	< 1200	< 800	< 890

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-17B	SB-18B	SB-18A	SB-19B	SB-20B	SB-21A	SB-21B	SB-22B	SB-23B	SB-24A	SB-24B
	(2-4')	(1.5-3.5')	(0-1')	(2-3')	(2-4')	(0-1')	(2-4')	(2-4')	(9-10')	(0-8')	(3-4')
SEMI-VOLATILE ORGANIC COMPOUNDS											
2,4-DINITROPHENOL	< 2500	< 2300	< 1400	< 1200	< 2300	< 2500	< 920	< 1000	< 2900	< 2000	< 2200
DIBENZOFURAN	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
4-NITROPHENOL	< 2500	< 2300	< 1400	< 1200	< 2300	< 2500	< 920	< 1000	< 2900	< 2000	< 2200
2,4-DINITROTOLUENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
FLUORENE	< 1000	< 930	< 580	< 480	140J	< 1000	< 370	< 400	< 1200	< 800	< 890
DIETHYLPHTHALATE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
4-CHLOROPHENYLPHENYL ETHER	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
4-NITROANILINE	< 2500	< 2300	< 1400	< 1200	< 2300	< 2500	< 920	< 1000	< 2900	< 2000	< 2200
2-METHYL-4,6-DINITROPHENOL	< 2500	< 2300	< 1400	< 1200	< 2300	< 2500	< 920	< 1000	< 2900	< 2000	< 2200
N-NITROSODIPHENYLAMINE (1)	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
4-BROMOPHENYLPHENYL ETHER	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
HEXACHLOROBENZENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
PENTACHLOROPHENOL	< 2500	< 2300	< 1400	< 1200	< 2300	< 2500	< 920	< 1000	< 2900	< 2000	< 2200
PHENANTHRENE	910J	< 930	< 580	< 480	1200	480J	170J	< 400	1200	< 800	2300
ANTHRACENE	< 1000	< 930	< 580	< 480	140J	470J	230J	< 400	< 1200	< 800	< 890
DI-N-BUTYLPHTHALATE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
FLUORANTHENE	540J	< 930	< 580	< 480	2200	780J	93J	180J	1200	1000	3800
PYRENE	530J	< 930	< 580	< 480	< 940	380J	99J	110J	< 1200	< 800	1700
BUTYLBENZYLPHTHALATE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
3,3'-DICHLOROBENZIDINE	< 2000	< 1900	< 1200	< 960	< 1900	< 2000	< 730	< 800	< 2300	< 1600	< 1800
BENZO(A)ANTHRACENE	370J	< 930	< 580	< 480	670J	< 1000	180J	< 400	< 1200	< 800	1200
CHRYSENE	390J	< 930	< 580	< 480	< 940	< 1000	170J	82J	< 1200	< 800	1200
BIS(2-ETHYLHEXYL)PHTHALATE	< 1000	< 930	< 580	< 480	< 940	100J	< 370	130J	< 1200	< 800	24000
DI-N-OCTYLPHTHALATE	< 1000	< 950	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
BENZO(B)FLUORANTHENE	450J	< 930	< 580	< 480	< 940	650J	180J	120J	< 1200	< 800	1700
BENZO(K)FLUORANTHENE	240J	< 930	< 580	< 480	< 940	570J	83J	72J	< 1200	< 800	490J
BENZO(A)PYRENE	140J	< 930	< 580	< 480	< 940	190J	78J	71J	< 1200	< 800	770J
INDENO(1,2,3-CD)PYRENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	88J	< 1200	< 800	< 890
DIBENZO(A,H)ANTHRACENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890
BENZO(G,H,I)PERYLENE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	98J	< 1200	< 800	< 890
CARBAZOLE	< 1000	< 930	< 580	< 480	< 940	< 1000	< 370	< 400	< 1200	< 800	< 890

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 5-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	PW-6	PW-7	PW-8	PW-9	MW-6A (2-4')	MW-6B (4-6')
SEMI-VOLATILE ORGANIC COMPOUNDS						
PHENOL	< 2900	< 400	< 380	< 4800	< 1100	< 940
BIS(2-CHLOROETHYL)ETHER	< 2900	< 400	< 380	< 4800	< 1100	< 940
2-CHLOROPHENOL	< 2900	< 400	< 380	< 4800	< 1100	< 940
1,3-DICHLOROBENZENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
1,4-DICHLOROBENZENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
1,2-DICHLOROBENZENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
2-METHYLPHENOL	< 2900	< 400	< 380	< 4800	< 1100	< 940
2,2'-OXYBIS(1-CHLOROPROPANE)	< 2900	< 400	< 380	< 4800	< 1100	< 940
4-METHYLPHENOL	< 2900	< 400	< 380	< 4800	< 1100	< 940
N-NITROSO-DI-N-PROPYLAMINE	< 2900	< 400	< 380	< 4800	< 1100	< 940
HEXACHLOROETHANE	< 2900	< 400	< 380	< 4800	< 1100	< 940
NITROBENZENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
ISOPHORONE	< 2900	< 400	< 380	< 4800	< 1100	< 940
2-NITROPHENOL	< 2900	< 400	< 380	< 4800	< 1100	< 940
2,4-DIMETHYLPHENOL	< 2900	< 400	< 380	< 4800	< 1100	< 940
BIS(2-CHLOROETHOXY)METHANE	< 2900	< 400	< 380	< 4800	< 1100	< 940
2,4-DICHLOROPHENOL	< 2900	< 400	< 380	< 4800	< 1100	< 940
1,2,4-TRICHLOROBENZENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
NAPHTHALENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
4-CHLOROANILINE	< 2900	< 400	< 380	< 4800	< 1100	< 940
HEXACHLOROBUTADIENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
4-CHLORO-3-METHYLPHENOL	< 2900	< 400	< 380	< 4800	< 1100	< 940
2-METHYLNAPHTHALENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
HEXACHLOROCYCLOPENTADIENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
2,4,6-TRICHLOROPHENOL	< 2900	< 400	< 380	< 4800	< 1100	< 940
2,4,5-TRICHLOROPHENOL	< 7500	< 1000	< 900	240000	< 2800	< 2300
2-CHLORONAPHTHALENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
2-NITROANILINE	< 7500	< 1000	< 900	< 12000	< 2800	< 2300
DIMETHYLPHTHALATE	< 2900	< 400	< 380	< 4800	< 1100	< 940
ACENAPHTHYLENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
2,6-DINITROTOLUENE	< 2900	< 400	< 380	< 4800	< 1100	< 940
3-NITROANILINE	< 7500	< 1000	< 900	< 12000	< 2800	< 2300
ACENAPHTHENE	< 2900	< 400	< 380	< 4800	< 1100	< 940

ALL UNITS UG/KG
J – INDICATES ESTIMATED VALUE

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	PW-6	PW-7	PW-8	PW-9	MW-8A (2-4)	MW-8B (4-6)
SEMI-VOLATILE ORGANIC COMPOUNDS						
2,4-DINITROPHENOL	< 7500	< 1000	< 900	< 12000	< 2800	< 2300
DIBENZOFURAN	< 2900	< 400	< 360	< 4800	< 1100	< 940
4-NITROPHENOL	< 7500	< 1000	< 900	< 12000	< 2800	< 2300
2,4-DINITROTOLUENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
FLUORENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
DIETHYLPHTHALATE	< 2900	< 400	< 360	< 4800	< 1100	< 940
4-CHLOROPHENYLPHENYL ETHER	< 2900	< 400	< 360	< 4800	< 1100	< 940
4-NITROANILINE	< 7500	< 1000	< 900	< 12000	< 2800	< 2300
2-METHYL-4,6-DINITROPHENOL	< 7500	< 1000	< 900	< 12000	< 2800	< 2300
N-NITROSODIPHENYLAMINE (1)	< 2900	< 400	< 360	< 4800	< 1100	< 940
4-BROMOPHENYLPHENYL ETHER	< 2900	< 400	< 360	< 4800	< 1100	< 940
HEXACHLOROBENZENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
PENTACHLOROPHENOL	< 7500	< 1000	< 900	270000	< 2800	< 2300
PHENANTHRENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
ANTHRACENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
DI-N-BUTYLPHTHALATE	< 2900	< 400	< 360	< 4800	< 1100	< 940
FLUORANTHENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
PYRENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
BUTYLBENZYLPHTHALATE	< 2900	< 400	< 360	< 4800	< 1100	< 940
3,3'-DICHLOROBENZIDINE	< 5800	< 800	< 720	< 9400	< 2200	< 1900
BENZO(A)ANTHRACENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
CHRYSENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
BIS(2-ETHYLHEXYL)PHTHALATE	< 3100	< 400	< 360	5300	1100J	< 940
DI-N-OCTYLPHTHALATE	< 2900	< 400	< 360	< 4800	< 1100	< 940
BENZO(B)FLUORANTHENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
BENZO(K)FLUORANTHENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
BENZO(A)PYRENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
INDENO(1,2,3-CD)PYRENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
DIBENZO(A,H)ANTHRACENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
BENZO(G,H,I)PERYLENE	< 2900	< 400	< 360	< 4800	< 1100	< 940
CARBAZOLE	< 2900	< 400	< 360	< 4800	< 1100	< 940

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SS-17B	SS-18B	SS-19A	SS-19B	SS-20B	SS-21A	SS-21B	SS-22B	SS-23B	SS-24A	SS-24B
	(2-4')	(1.5-3.5')	(0-1')	(2-3')	(2-4')	(0-1')	(2-4')	(2-4')	(8-10')	(0-8')	(3-4')
PESTICIDES											
ALPHA-BHC	< 2.7	< 2.6	< 3.1	< 2.6	< 2.5	< 2.9	< 2	< 5.8	< 3.2	< 2.2	< 2.3
BETA-BHC	< 2.7	< 2.6	< 3.1	< 2.6	< 2.5	< 2.8	< 2	4.3J	16	< 2.2	< 2.3
DELTA-BHC	< 2.7	< 2.6	< 3.1	< 2.6	< 2.5	< 2.8	< 2	< 5.8	< 3.2	< 2.2	< 2.3
GAMMA-BHC (LINDANE)	< 2.7	< 2.6	< 3.1	< 2.6	< 2.5	< 2.8	< 2	< 5.8	< 3.2	< 2.2	< 2.3
HEPTACHLOR	< 2.7	< 2.6	< 3.1	< 2.6	< 2.5	< 2.8	< 2	< 5.8	< 3.2	< 2.2	< 2.3
ALDRIN	< 2.7	< 2.6	< 3.1	< 2.6	< 2.5	< 2.8	< 2	< 5.8	< 3.2	< 2.2	< 2.3
HEPTACHLOR EPOXIDE	32	2.5J	8.8	< 2.6	< 2.5	21	3.4	< 5.8	< 3.2	11	48
ENDOSULFAN I	< 2.7	< 2.6	< 3.1	< 2.6	< 2.5	< 2.8	< 2	< 5.8	< 3.2	< 2.2	< 2.3
DIELDRIN	140	21	< 6	< 5.1	< 4.9	47	9.4	< 11	23	30	100
4,4'-DDE	72	8.8	34	< 5.1	< 4.9	21	< 3.9	< 11	4.8J	11	56
ENDRIN	< 5.2	< 5	< 6	< 5.1	4.7J	< 3.3	< 3.9	< 11	< 6.2	< 4.2	< 4.5
ENDOSULFAN II	< 5.2	< 5	< 6	< 5.1	< 4.9	< 3.3	< 3.9	< 11	< 6.2	< 4.2	< 4.5
4,4'-DDD	< 5.2	< 5	< 6	< 5.1	< 4.9	< 3.3	< 3.9	< 11	45	3.2J	< 4.5
ENDOSULFAN SULFATE	< 5.2	< 5	< 6	< 5.1	< 4.9	< 3.3	< 3.9	< 11	< 6.2	< 4.2	< 4.5
4,4'-DDT	< 5.2	< 5	16	< 5.1	< 4.9	28	< 3.9	8.5J	8.2	27	28
METHOXYCHLOR	< 27	< 26	< 31	< 26	< 25	< 28	< 20	< 58	< 32	< 22	< 23
ENDRIN KETONE	< 5.2	< 5	< 6	< 5.1	< 4.9	< 5.3	< 3.9	< 11	< 6.2	< 4.2	< 4.5
ENDRIN ALDEHYDE	< 5.2	< 5	< 6	< 5.1	< 4.9	< 5.3	< 3.9	< 11	< 6.2	< 4.2	< 4.5
ALPHA-CHLORDANE	< 2.7	< 2.6	7.5	< 2.6	< 2.5	< 2.8	< 2	< 5.8	< 3.2	< 2.2	< 2.3
GAMMA-CHLORDANE	< 2.7	< 2.6	< 3.1	< 2.6	< 2.5	< 2.8	< 2	< 5.8	22	< 2.2	< 2.3
TOXAPHENE	< 270	< 260	< 310	< 260	< 250	< 280	< 200	< 580	< 320	< 220	< 230
AROCLOR-1016	< 52	< 50	< 60	< 51	< 49	< 53	< 39	< 110	< 62	< 42	< 46
AROCLOR-1221	< 110	< 100	< 120	< 100	< 99	< 110	< 79	< 230	< 130	< 88	< 92
AROCLOR-1232	< 52	< 50	< 60	< 51	< 49	< 53	< 39	< 110	< 62	< 42	< 45
AROCLOR-1242	< 52	< 50	< 60	< 51	< 49	< 53	< 39	< 110	< 62	< 42	< 45
AROCLOR-1248	< 52	< 50	< 60	< 51	< 49	< 53	< 39	< 110	< 62	< 42	< 45
AROCLOR-1254	2400	< 50	1300	< 51	< 49	500	240	< 110	< 62	< 42	1800
AROCLOR-1260	< 52	< 50	< 60	< 51	< 49	< 53	< 39	< 110	< 62	380	1200
										< 42	< 45

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-25B	SB-26B	SB-27A	SB-27B	SB-29B	SB-29BD	PW-1	PW-2	PW-3	PW-4	PW-5
	(3.5-4.5')	(3-4')	(0-1')	(2-3')	(1-2')	(1-2')					
PESTICIDES											
ALPHA-BHC	< 2.5	< 4.9	< 2.1	< 2.5	< 2.8	< 3.4	< 24	< 2.5	< 4.4	< 2.5	< 4.7
BETA-BHC	19	< 4.8	9.4	38	< 2.8	34	< 24	< 2.5	< 4.4	< 2.5	13
DELTA-BHC	< 2.5	< 4.9	< 2.1	< 2.5	< 2.8	< 3.4	< 24	< 2.5	< 4.4	< 2.5	< 4.7
GAMMA-BHC (LINDANE)	< 2.5	< 4.9	< 2.1	< 2.5	< 2.8	< 3.4	< 24	< 2.5	< 4.4	< 2.5	< 4.7
HEPTACHLOR	20	43	< 2.1	34	< 2.8	6.7	< 24	< 2.5	< 4.4	< 2.5	< 4.7
ALDRIN	36	< 4.9	< 2.1	< 2.5	< 2.8	< 3.4	< 24	< 2.5	< 4.4	< 2.5	< 4.7
HEPTACHLOR EPOXIDE	84	< 4.9	4.8	< 2.5	8.9	< 7.9	< 24	< 2.5	< 4.4	< 2.5	14
ENDOSULFAN I	< 2.8	< 4.9	< 2.1	< 2.5	< 2.8	< 3.4	< 24	< 2.5	< 4.4	< 2.5	< 4.7
DIELDRIN	< 4.8	< 9.5	8.3	< 4.8	20	21	< 47	< 4.8	< 8.5	4.8J	< 9.1
4,4'-DDE	< 57	< 9.5	< 4.1	< 4.8	< 7.4	8.5	< 47	< 4.8	< 8.5	< 4	8.8
ENDRIN	< 4.9	< 9.5	< 4.1	< 4.8	< 5.4	< 6.5	< 47	< 4.8	< 8.5	< 4.9	< 9.1
ENDOSULFAN II	< 4.8	< 9.5	< 4.1	< 4.8	< 5.4	< 6.5	< 47	< 4.8	< 6.8	< 4.9	< 9.1
4,4'-DDD	< 4.9	< 9.5	< 4.1	< 4.8	< 5.4	< 6.5	< 47	< 4.8	< 8.5	< 4.8	8.8
ENDOSULFAN SULFATE	< 4.8	< 9.5	< 4.1	< 4.8	< 5.4	< 6.5	< 47	< 4.8	< 8.5	< 11	< 9.1
4,4'-DDT	< 4.9	< 9.5	8.8	< 4.8	22	< 6.5	< 47	< 4.8	< 8.5	< 4.9	17
METHOXYCHLOR	< 25	< 49	< 21	< 25	< 28	< 34	< 240	< 25	< 44	15J	< 47
ENDRIN KETONE	< 4.9	< 9.5	< 4.1	< 4.8	< 5.4	< 6.5	< 47	< 4.8	< 8.8	< 4.9	< 9.1
ENDRIN ALDEHYDE	< 4.9	< 9.5	< 4.1	< 4.6	< 5.4	< 6.5	< 47	< 4.8	< 8.5	< 4.9	< 9.1
ALPHA-CHLORDANE	< 2.5	< 9.5	< 2.1	< 2.5	< 2.8	< 3.4	< 24	< 2.5	< 4.4	8	< 4.7
GAMMA-CHLORDANE	60	< 4.9	< 2.1	< 2.5	< 2.8	< 3.4	< 24	< 2.5	< 4.4	< 2.5	12
TOXAPHENE	< 250	< 490	< 210	< 250	< 280	< 340	< 2400	< 250	< 440	< 250	< 470
AROCLOR-1016	< 49	< 95	< 41	< 48	< 54	< 65	< 470	< 48	< 85	< 49	< 91
AROCLOR-1221	< 100	< 190	< 83	< 98	< 110	< 130	< 860	< 98	< 170	< 100	< 190
AROCLOR-1232	< 49	< 95	< 41	< 48	< 54	< 65	< 470	< 48	< 85	< 49	< 91
AROCLOR-1242	< 49	< 95	< 41	< 48	< 54	< 65	< 470	< 48	< 85	< 49	< 91
AROCLOR-1248	* 2800	< 95	< 41	< 48	< 54	< 65	< 470	< 48	< 85	< 49	< 91
AROCLOR-1254	< 49	< 95	< 41	< 48	< 54	< 65	< 470	< 48	< 88	< 49	< 91
AROCLOR-1260	< 49	< 95	< 41	< 48	< 54	< 65	< 470	< 48	< 85	< 49	< 91

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

MWG13-15_47272

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	SB-10A	SB-10B	SB-11A	SB-11B	SB-11BD	SB-12A	SB-13B	SB-14B	SB-15A	SB-15B	SB-16B
	(0-1')	(2-4')	(0-1')	(2-4')	(2-4')	(0-2')	(2-4')	(2-4')	(0-1')	(2-4')	(2-4')
PESTICIDES											
ALPHA-BHC	< 18	< 2	< 2.4	< 2.2	< 2.8	< 2.5	< 2.4	< 2.4	< 12	< 2.1	< 7.3
BETA-BHC	< 18	20	< 2.4	< 2.2	< 11	< 2.5	< 2.4	20	< 12	< 2.1	< 7.3
DELTA-BHC	< 18	< 2	< 2.4	< 2.2	< 2.5	< 2.5	< 2.4	< 2.4	< 12	< 2.1	< 7.3
GAMMA-BHC (LINDANE)	< 18	< 2	< 2.4	< 2.2	< 2.5	< 2.5	< 2.4	< 2.4	< 12	< 2.1	< 7.3
HEPTACHLOR	< 18	< 2	< 2.4	< 2.2	< 2.5	< 2.5	< 2.4	< 2.4	< 12	< 2.1	< 7.3
ALDRIN	< 18	< 2	< 2.4	< 2.2	< 2.5	< 2.5	< 2.4	9.4	350	< 2.1	73
HEPTACHLOR EPOXIDE	< 18	42	< 2.4	< 2.2	< 2.5	85	14	14	880	160	< 7.3
ENDOSULFAN I	< 18	< 2	< 2.4	< 2.2	< 2.5	< 2.5	< 2.4	< 2.4	< 12	< 2.1	< 7.3
DIELDRIN	1900	110	62	36	40	280	67	< 4.7	< 25	120	68
4,4'-DDE	<35	44	400	130	160	81	83	75	710	95	< 170
ENDRIN	< 35	< 3.6	< 4.7	< 4.3	< 4.8	< 4.9	< 4.6	< 4.7	< 25	< 4.1	< 14
ENDOSULFAN II	< 35	< 3.6	< 4.7	< 4.3	< 4.8	< 4.9	< 4.6	< 4.7	< 25	< 4.1	< 14
4,4'-DDD	< 35	< 3.6	410	120	220	1.9J	140	< 4.7	820	< 4.1	430
ENDOSULFAN SULFATE	< 35	< 3.6	< 4.7	< 4.3	< 4.8	< 4.9	< 4.6	< 4.7	< 25	< 4.1	< 14
4,4'-DDT	< 35	< 3.6	2800	800	2000	28	31	< 4.7	280	< 4.1	< 14
METHOXYCHLOR	< 180	< 20	< 24	< 22	< 25	< 23	< 24	< 24	< 120	< 21	< 73
ENDRIN KETONE	< 35	< 3.6	< 4.7	< 4.3	< 4.8	< 4.9	< 4.6	< 4.7	< 25	< 4.1	< 14
ENDRIN ALDEHYDE	< 35	< 3.6	< 4.7	< 4.3	< 4.8	< 4.9	< 4.6	< 4.7	< 25	< 4.1	< 14
ALPHA-CHLORDANE	< 18	< 2	< 2.4	< 2.2	< 2.5	< 2.5	< 2.4	< 2.4	< 25	< 2.1	< 7.3
GAMMA-CHLORDANE	< 18	< 2	< 2.4	< 2.2	< 2.6	< 2.5	< 2.4	< 2.4	< 25	< 2.1	22
TOXAPHENE	< 1800	< 200	< 240	< 220	< 250	< 250	< 240	< 240	< 1200	< 210	< 730
AROCLOR-1016	< 350	< 36	< 47	< 43	< 48	< 49	< 46	< 47	< 250	< 41	< 140
AROCLOR-1221	< 710	< 73	< 96	< 68	< 96	< 100	< 93	< 96	< 50	< 82	< 280
AROCLOR-1232	< 350	< 36	< 47	< 43	< 48	< 49	< 46	< 47	< 250	< 41	< 140
AROCLOR-1242	< 350	< 36	< 47	< 43	< 48	< 49	< 46	< 47	< 250	< 41	< 140
AROCLOR-1248	58000	2100	< 47	< 43	< 48	< 49	< 46	370	30000	7400	2200
AROCLOR-1254	< 350	< 36	< 47	< 43	< 48	< 49	1000	840	< 250	< 41	1200
AROCLOR-1260	< 350	< 36	< 47	< 43	< 48	< 49	< 48	< 47	< 250	< 41	< 140

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 6-4
SOIL ANALYTICAL RESULTS COLLECTED IN AREA III
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	PW-6	PW-7	PW-8	PW-9	MW-6A (2-4')	MW-6B (4-6')
PESTICIDES						
ALPHA-BHC	< 16	< 2.1	< 1.9	< 52	< 3	< 2.8
BETA-BHC	< 16	30	8.4	< 52	< 3	< 2.8
DELTA-BHC	< 16	< 2.1	< 1.9	< 52	< 3	< 2.8
GAMMA-BHC (LINDANE)	< 16	< 2.1	< 1.9	< 52	< 3	< 2.8
HEPTACHLOR	< 16	20	< 1.9	< 52	< 3	< 2.8
ALDRIN	< 16	< 2.1	< 1.9	< 52	120	25
HEPTACHLOR EPOXIDE	< 16	< 2.1	8.1	< 52	84	18
ENDOSULFAN I	< 16	< 2.1	< 1.9	< 52	< 3	17
DIELDRIN	< 30	< 4.2	< 3.8	< 100	< 5.9	< 5.1
4,4'-DDE	< 30	< 4.2	4.1	240	110	24
ENDRIN	< 30	< 4.2	< 3.8	< 100	18	< 5.1
ENDOSULFAN II	< 30	< 4.2	< 3.8	< 100	< 5.9	< 5.1
4,4'-DDD	< 30	< 4.2	< 3.8	< 100	76	< 5.1
ENDOSULFAN SULFATE	< 30	< 4.2	< 3.8	< 100	< 5.9	< 5.1
4,4'-DDT	< 30	12	20	< 100	< 5.9	< 5.1
METHOXYCHLOR	< 160	< 21	< 19	< 520	< 30	< 28
ENDRIN KETONE	< 30	4.8	< 3.8	< 100	< 5.9	< 5.1
ENDRIN ALDEHYDE	< 30	< 4.2	< 3.8	< 100	32	< 5.1
ALPHA-CHLORDANE	< 16	< 2.1	< 1.9	< 52	370	< 2.8
GAMMA-CHLORDANE	< 16	< 2.1	8.8	< 52	250	< 2.8
TOXAPHENE	< 1600	< 210	< 190	< 5200	< 300	< 280
AROCLOR-1016	< 300	< 42	< 38	< 1000	< 59	< 51
AROCLOR-1221	< 610	< 85	< 77	< 2000	< 120	< 100
AROCLOR-1232	< 300	< 42	< 38	< 1000	< 59	< 51
AROCLOR-1242	< 300	< 42	< 38	< 1000	< 59	< 51
AROCLOR-1248	< 300	< 42	< 38	< 1000	4900	770
AROCLOR-1254	< 300	< 42	< 38	< 1000	< 59	< 51
AROCLOR-1260	< 300	< 42	< 38	< 1000	< 59	< 51

ALL UNITS UG/KG
J - INDICATES ESTIMATED VALUE

TABLE 6-5
PRODUCTION WASTE TCLP RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	PW-1	PW-2	PW-3	PW-4	PW-5	PW-6	PW-7	PW-8	PW-9	Regulatory Limits
TCLP METALS										
ARSENIC	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	5.0
BARIUM	0.847	0.272	0.229	0.731	2.03	13.1	0.325	1.18	0.145	100.0
CADMIUM	<0.005	0.178	<0.005	0.046	<0.005	<0.005	<0.005	0.314	<0.005	1.0
CHROMIUM	0.017	0.075	<0.010	0.280	8.08	<0.010	<0.010	0.071	24.2	5.0
LEAD	<0.050	<0.050	<0.050	86.9	0.054	<0.050	<0.050	0.736	<0.050	5.0
MERCURY*	0.0003	0.0002	<0.0002	0.004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.2
SELENIUM	<0.075	<0.375	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	<0.075	1.0
SILVER	<0.010	<0.050	<0.010	<0.010	0.010	<0.010	<0.010	<0.010	<0.010	5.0

* Mercury value reported from analysis outside of methods holding time.
All units mg/l.

— Indicates exceedance of regulatory limits.

MWG13-15_47275

Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690 - 0767

0971900004
Pfleger Tannery (Griess)
SF/Tech

94-760

July 27, 1994

Replaced pages follow

CERTIFIED MAIL

Mr. Timothy J. Murphy
Pre-Notice Sub Unit
Remedial Project Management Section
Bureau of Land
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, Illinois 62794-9276

Re: 0971900004 -- Lake County
Former Griess - Pfleger Tannery
Finalization of Remedial Investigation Report - Phase One

Dear Mr. Murphy:

Per your July 12, 1994 comment letter, and July 20, 1994 meeting with Pete McCauley of my staff, enclosed are three packets containing revised replacement pages to finalize the Remedial Investigation Report - Phase One for the former Griess-Pfleger Tannery site. The following changes have been made to the report:

- IEPA Comment 1, Page 4-6 - The text "...collected with a hand auger were composited." has been changed to "... collected with a hand auger."
- IEPA Comment 2, Page 6-3 - The text "...however, arsenic trioxide may have been used as a rat poison" has been added.
- IEPA Comment 3, Page 6-12 - "Whit" has been changed to "White".
- IEPA Comment 4, Page 6-13 - The following paragraph has been added to discern that all the hide material may not be TCLP hazardous.

  "The exceedance of TCLP regulatory limits does not imply that all production waste material is hazardous. An additional study of chromium's valance states (Cr^{+3}, Cr^{+6}) will determine the pursuance of the chromium waste exclusion, as stated in 35 IAC 721.104(b)(6), as it pertains to tannery waste streams".

- IEPA Comment 5, Page 7-3 - The following paragraphs have been added with regard to installing deeper monitoring wells and to discern that all hide material may not be TCLP hazardous.

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"Install several deeper monitoring wells to determine if deeper stratigraphic units or groundwater bearing zones have been impacted from past tannery operations."

"Speciation of the valence states during the Phase II study parameters will assist in the pursuance of the chromium waste exclusion, as stated in 35 IAC 721.104(b)(6), as it pertains to tannery waste streams".

- IEPA Comment 6 - Table 6-1 units have been changed to ug/l.

Please note that with finalization of the report, we will be submitting copies to the site repository at the Waukegan Public Library, and the Waukegan Harbor Citizen Advisory Group. In addition, we are now proceeding with the development of a Work Plan to address Phase Two investigative activities.

Should you have any questions regarding the project, please contact Pete McCauley at 312/394-4470.

Sincerely,

Brian M. McCann

Brian M. McCann
Supervisor of Land Quality

PBM:BMM:et
finphs1.let

cc: Greg Michaud (IEPA) w/att.
Denise Story (Metcalf & Eddy)
P. B. McCauley

RECEIVED
AUG 01 1994
IEPA/DLPC

09130.000688

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director
(217) 782-6760

2200 Churchill Road, Springfield, IL 62794-9276

July 12, 1994

Brian McCann
Commonwealth Edison
One First National Plaza
P.O. Box 767
Chicago, IL 60690-0767

Re: 0971900004 -- Lake County
Waukegan/Former Griess-Pfleger Tannery
Superfund/Technical Reports
Remedial Investigation Report - Phase I

Dear Mr. McCann,

The Agency has reviewed the RI report. The report does well in documenting the impact of the past chrome tanning operation. Please address a few corrections and/or comments prior to finalizing the report.

1. The top of page 4-6 states that hand auger samples were composite samples for VOC's. Composite samples are collections of a waste, sediment or soil from various depths or locations that are mixed together prior to being transferred to the sample container. This should not have been done for VOC's as aeration would occur. If the samples were pushed or knocked out of the hand auger and onto a tray to catch the sample and then transferred to the sample container (without being mixed) then you might paraphrase the top of page 4-6 leaving out the word composite.

2. Page 6-3, the source of arsenic is unknown, however, arsenic trioxide was a rat poison that may have been used.

3. Page 6-12 spell check: PW-2: Whit (White), clay-like material.

4. Could the waste samples PW-5 and PW-9 indicate that all the hide material is TCLP hazardous?

5. Page 7-3, add several deeper monitor wells to the Phase II study.

6. Table 6-1, units at the bottom of several pages should be in ug/l.

99130.000689

Griess-Pfleger Phase I RI
July 12, 1994

This concludes the review comments and corrections, if there are any questions, please call.

Sincerely,

Timothy J. Murphy

Timothy J. Murphy
Project Manager, Remedial Project Management Section, Bureau of Land

TJM:tjm grspflrI.rev

78

collected with a hand auger were composited. A stainless steel spoon was used to transfer the soil into the sample container. Soil collected for VOC samples was packed into the sample container and headspace was minimized. All samples were capped as quickly as feasible.

4.3.2.4 Surface and Subsurface Soil Quality Control Samples

During this sampling event, quality control (QC) samples were collected and submitted for laboratory analysis. Equipment blank and field duplicate samples were collected as part of the QC protocol.

Equipment blanks were collected for each piece of sampling equipment used in the collection of samples. For soil sampling, the samples were collected form a stainless steel hand auger and split spoon to verify the adequacy of the decontamination procedures.

Duplicate samples were collected in accordance with the QAPP to provide statistical information relating to the sample variability and serve as a check on the precision of the sample collection method.

4.4 MONITORING WELL INSTALLATION/CLOSURE

4.4.1 Purpose

Seven monitoring wells (MW-1 through MW-7) were installed during field activities as a means of assessing groundwater quality, horizontal groundwater flow direction, groundwater flow rate, and site stratigraphy. One 14-foot deep stainless steel monitoring well (installed by others) was abandoned to remove this potential conduit from the subsurface.

4.4.1.1 Locations and Rationale

Seven water-table monitoring wells (screens intersecting the water table) were installed as part of the field activities. The monitoring well locations (installed and abandoned) are shown on Figure 4-6. Two monitoring wells (MW-1 and MW-2) were installed adjacent to the former tannery process ponds. These monitoring wells were located in areas believed to be downgradient from the former tannery process ponds, and were used to determine if groundwater had been impacted by the process ponds.

Four monitoring wells were installed around the periphery of the site. These four wells are used to evaluate the horizontal extent of the impact on the groundwater by the tannery activities. Monitoring wells MW-3, MW-5, and MW-6 were located along the eastern edge of the property boundary, in the assumed downgradient direction, to determine the horizontal extent of environmental impact and to determine whether

Lead was identified in MW-1 at a concentration of 40.7 ug/l, above the Class I Standard of 7.5 ug/l. The presence of lead is questionable at this location because the concentration of lead in the duplicate sample was reported as less than 2.4 ug/l.

Arsenic was also detected in MW-1 above the Class I Standard of 50 ug/l. The arsenic concentration in MW-1 was reported to be 6470 ug/l while the duplicate sample reported 6,490 ug/l. The source of the arsenic is unknown as this analyte was not historically used during normal tannery operations.

All monitoring wells exceeded the Class I Standard of 1,200 mg/l for total dissolved solids.

Overall, it appears that the constituents present in the surficial and subsurficial soil have not significantly impacted the groundwater in and around the site. Additionally, many of the constituents detected above the Class I Water Quality Standards may be naturally occurring in the groundwater as is evidenced by their presence in the upgradient monitoring well.

Analytical results for all groundwater, cistern, field blank, and trip blank samples are found in Table 6-1.

6.2 AREA I

This section summarizes the data collected from surficial and sub-surficial soil samples collected within the boundaries of this area as well as the sediment sample collected from the open sewer located near the cistern. Initially, a sediment sample was scheduled to be collected from the cistern. However, this sample was not collected because the bottom and sides of the cistern were solid and contained no sediment.

A total of 23 soil samples were collected within Area I; 6 surficial, 16 subsurficial, and one sediment.

6.2.1 Volatile Organic Compounds

A total of three samples were found to contain one VOC each; SB-33B, SB-35B, and SB-37B. Both SB-35B and SB-37B contained methylene chloride at an estimated concentration of 12 ug/kg and 18 ug/kg respectively. Methylene chloride is a commonly used laboratory solvent and, as such, is often found as a laboratory contaminant. This, coupled with the historic non-use of this solvent during the tanning process, raises question as to the presence of this compound in the environmental samples collected.

Trichloroethene (TCE) was the only other VOC detected in this area. Trichloroethene was found in SB-33B at an estimated concentration of 7 ug/kg. The source of the provides a surficial distribution of lead concentrations in excess of 1,000 mg/kg. A subsurficial map was not prepared for lead because there were three locations found to contain lead above the 1,000 mg/kg limit: SB-01B - 1,520 mg/kg; SB-09B - 1,260 mg/kg; and SB-15B - 1,610 mg/kg.

Chromium was detected at a maximum concentration of 25,500 mg/kg in SB-23B. Chromium concentrations within this area tended to drop significantly with increasing sampling depth. The average chromium concentration throughout this area is 3,700 mg/kg and is concentrated mainly in the area of, and adjacent to, the production waste samples. Overall, the highest chromium value was found in PW-4 at 63,100 mg/kg. Figures 6-10 and 6-11 provide a surficial and subsurficial distribution of chromium.

Analytical results for the TAL analytes identified in this area can be found in Table 6-4.

6.5 PRODUCTION WASTE TCLP SAMPLES

In an effort to characterize the production wastes (PW), nine samples were collected from both partially contained (deteriorating drums) and non-contained sources. The samples were collected from various location in Areas IV and V. The following depicts the physical descriptions of the production waste samples when collected in the field.

- PW-1: Red beads approximately the size of medium sand. This material was located under a pile of fiberglass.
- PW-2: Whit, clay-like material.
- PW-3: Red sandy-like material collected from a corroded 55-gallon drum in a pile of other drums.
- PW-4: Orange colored solid material collected from a 5-gallon rusted pail.
- PW-5: Tan fibrous material (remnants of hide material) located just north of the southern fence-line of Area V.
- PW-6: Black material located inside of a 1.5 foot long by 7 inches wide steel canister.
- PW-7: Grey-black cinder like material in appearance.
- PW-8: A very corroded 55-gallon drum with incinerated waste materials.

- PW-9 - Grey, white, and pink hide material with a slight odor from an almost completely corroded drum.

The nine production waste samples were collected within the boundaries of Area III. These samples were analyzed to determine if any of the constituent concentrations exceeded the Toxicity Characteristic Leaching Procedure (TCLP) regulatory limits found in 40 CFR 261.24.

Of the nine samples collected, three of the samples exceeded the regulatory limits. The extract for PW-4 was found to contain 66.9 mg/l lead, in excess of the 5.0 mg/l limit. The regulatory limit for chromium, 5.0 mg/l, was exceeded in samples PW-5 and PW-9 with concentrations of 8.06 mg/l and 24.2 mg/l, respectively. There were no other concentrations reported above the regulatory limits.

Analytical results for all TCLP parameters are presented in Table 6-5.

II activities are recommended to determine if off-site areas have been impacted by former tannery operations.

- Collect a second round of groundwater samples from all seven monitoring wells. This additional groundwater data will help to confirm the presence or absence of constituents of concern in the groundwater.

- Reduce the investigation analyte list for both soil and groundwater in Phase II (e.g. only sample those parameters which were detected in elevated levels during the first phase of the RI).

- Collect soil samples and analyze for select inorganic TCLP parameters, specifically chromium, lead, mercury, and arsenic. These analyses will aid in the determination of whether the material should be treated as a hazardous waste. This will also help in the selection of remedial alternatives.

- Analyze for hexavalent chromium to differentiate the speciation of the valence states during Phase II activities of the RI. Chromium, can be present in the surface and subsurface in two valence states with different toxicities; trivalent chromium (Cr^{+3}) and hexavalent chromium (Cr^{+6}).

- As determined during the Remedial Investigation, three production waste samples exceeded TCLP regulatory levels; two samples exceeded the limit for chromium and one sample exceeded the limit for lead.

  The samples which exceeded the TCLP chromium level, PW-5, and PW-9, represent partially decomposed hide material, much of which is buried. Prior to addressing removal, these materials should be characterized in terms of the valence state of the chromium, and the extent to which the buried hide wastes exist on site.

  The sample which exceeded the TCLP for lead, PW-4, represents a small quantity of a solid orange material which appears to have once been containerized in now deteriorated five gallon cans. This waste, which appears to be localized to a small surface location, should be removed from the site in an appropriate manner.

Baseline Risk Assessment

- Conduct a Baseline Risk Assessment. By definition, a baseline Risk Assessment is an analysis of the potential adverse effects (current or future use) caused by hazardous substance releases from the site in absence of any actions to control or mitigate these releases (reference). The result of the risk assessment for the former tannery will be used to document the magnitude of

risk at the site, determine what actions are necessary, and aid in developing remediation goals. The scope of the risk assessment will be directed at potential risks to human health and the environment posed by exposure to impacted soil and groundwater. Chemicals of potential concern will consist of a detailed evaluation of the analytical data, analysis of sources of environmental impacts and site characteristics, and a review of potential migration pathways. The Risk Assessment should be conducted in accordance with applicable Risk Assessment guidelines. An ecological Risk Assessment should also be conducted as part of the Baseline Risk Assessment because the site is located within sensitive areas (wetlands). An Ecologic Risk Assessment is a process which evaluates the likelihood of adverse ecological effects that may occur as a result of exposure. The Ecological Risk Assessment is designed to detect existing risks or forecast the risk of stress.

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-1	MW-1D	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	Cistern		
SEMI-VOLATILE ORGANIC COMPOUNDS											
PHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BIS(2-CHLOROETHYL)ETHER	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2-CHLOROPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
1,3-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
1,4-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
1,2-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,2'-OXYBIS(1-CHLOROPROPANE)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
N-NITROSO-DI-N-PROPYLAMINE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
HEXACHLOROETHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
NITROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
ISOPHORONE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2-NITROPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,4-DIMETHYLPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BIS(2-CHLOROETHOXY)METHANE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,4-DICHLOROPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
1,2,4-TRICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
NAPHTHALENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-CHLOROANILINE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
HEXACHLOROBUTADIENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-CHLORO-3-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2-METHYLNAPHTHALENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
HEXACHLOROCYCLOPENTADIENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,4,6-TRICHLOROPHENOL	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,4,5-TRICHLOROPHENOL	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
2-CHLORONAPHTHALENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2-NITROANILINE	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
DIMETHYLPHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
ACENAPHTHYLENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
2,6-DINITROTOLUENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
3-NITROANILINE	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
ACENAPHTHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		

ALL UNITS UG/KG

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-1	MW-1D	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	Cistern		
SEMI-VOLATILE ORGANIC COMPOUNDS											
2,4-DINITROPHENOL	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
DIBENZOFURAN	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-NITROPHENOL	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
2,4-DINITROTOLUENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
FLUORENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
DIETHYLPHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-CHLOROPHENYLPHENYL ETHER	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-NITROANILINE	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
2-METHYL-4,6-DINITROPHENOL	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
N-NITROSODIPHENYLAMINE (1)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
4-BROMOPHENYLPHENYL ETHER	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
HEXACHLOROBENZENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
PENTACHLOROPHENOL	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
PHENANTHRENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
ANTHRACENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
DI-N-BUTYLPHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
FLUORANTHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
PYRENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BUTYLBENZYLPHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
3,3'-DICHLOROBENZIDINE	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20		
BENZO(A)ANTHRACENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
CHRYSENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BIS(2-ETHYLHEXYL)PHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
DI-N-OCTYLPHTHALATE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BENZO(B)FLUORANTHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BENZO(K)FLUORANTHENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BENZO(A)PYRENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
INDENO(1,2,3-CD)PYRENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
DIBENZO(A,H)ANTHRACENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
BENZO(G,H,I)PERYLENE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
CARBAZOLE	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		

ALL UNITS UG/KG

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	FB-GW	FB-1	FB-2	FB-3	FB-4						
SEMI-VOLATILE ORGANIC COMPOUNDS											
PHENOL	< 10	< 10	< 10	< 10	< 10						
BIS(2-CHLOROETHYL)ETHER	< 10	< 10	< 10	< 10	< 10						
2-CHLOROPHENOL	< 10	< 10	< 10	< 10	< 10						
1,3-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10						
1,4-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10						
1,2-DICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10						
2-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10						
2,2'-OXYBIS(1-CHLOROPROPANE)	< 10	< 10	< 10	< 10	< 10						
4-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10						
N-NITROSO-DI-N-PROPYLAMINE	< 10	< 10	< 10	< 10	< 10						
HEXACHLOROETHANE	< 10	< 10	< 10	< 10	< 10						
NITROBENZENE	< 10	< 10	< 10	< 10	< 10						
ISOPHORONE	< 10	< 10	< 10	< 10	< 10						
2-NITROPHENOL	< 10	< 10	< 10	< 10	< 10						
2,4-DIMETHYLPHENOL	< 10	< 10	< 10	< 10	< 10						
BIS(2-CHLOROETHOXY)METHANE	< 10	< 10	< 10	< 10	< 10						
2,4-DICHLOROPHENOL	< 10	< 10	< 10	< 10	< 10						
1,2,4-TRICHLOROBENZENE	< 10	< 10	< 10	< 10	< 10						
NAPHTHALENE	< 10	< 10	< 10	< 10	< 10						
4-CHLOROANILINE	< 10	< 10	< 10	< 10	< 10						
HEXACHLOROBUTADIENE	< 10	< 10	< 10	< 10	< 10						
4-CHLORO-3-METHYLPHENOL	< 10	< 10	< 10	< 10	< 10						
2-METHYLNAPHTHALENE	< 10	< 10	< 10	< 10	< 10						
HEXACHLOROCYCLOPENTADIENE	< 10	< 10	< 10	< 10	< 10						
2,4,6-TRICHLOROPHENOL	< 10	< 10	< 10	< 10	< 10						
2,4,5-TRICHLOROPHENOL	< 25	< 25	< 25	< 25	< 25						
2-CHLORONAPHTHALENE	< 10	< 10	< 10	< 10	< 10						
2-NITROANILINE	< 25	< 25	< 25	< 25	< 25						
DIMETHYLPHTHALATE	< 10	< 10	< 10	< 10	< 10						
ACENAPHTHYLENE	< 10	< 10	< 10	< 10	< 10						
2,6-DINITROTOLUENE	< 10	< 10	< 10	< 10	< 10						
3-NITROANILINE	< 25	< 25	< 25	< 25	< 25						
ACENAPHTHENE	< 10	< 10	< 10	< 10	< 10						

ALL UNITS UG/KG

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	FB-GW	FB-1	FB-2	FB-3	FB-4						
SEMI-VOLATILE ORGANIC COMPOUNDS											
2,4-DINITROPHENOL	< 25	< 25	< 25	< 25	< 25						
DIBENZOFURAN	< 10	< 10	< 10	< 10	< 10						
4-NITROPHENOL	< 25	< 25	< 25	< 25	< 25						
2,4-DINITROTOLUENE	< 10	< 10	< 10	< 10	< 10						
FLUORENE	< 10	< 10	< 10	< 10	< 10						
DIETHYLPHTHALATE	< 10	< 10	< 10	< 10	< 10						
4-CHLOROPHENYLPHENYL ETHER	< 10	< 10	< 10	< 10	< 10						
4-NITROANILINE	< 25	< 25	< 25	< 25	< 25						
2-METHYL-4,6-DINITROPHENOL	< 25	< 25	< 25	< 25	< 25						
N-NITROSODIPHENYLAMINE (1)	< 10	< 10	< 10	< 10	< 10						
4-BROMOPHENYLPHENYL ETHER	< 10	< 10	< 10	< 10	< 10						
HEXACHLOROBENZENE	< 10	< 10	< 10	< 10	< 10						
PENTACHLOROPHENOL	< 25	< 25	< 25	< 25	< 25						
PHENANTHRENE	< 10	< 10	< 10	< 10	< 10						
ANTHRACENE	< 10	< 10	< 10	< 10	< 10						
DI-N-BUTYLPHTHALATE	< 10	< 10	< 10	< 10	< 10						
FLUORANTHENE	< 10	< 10	< 10	< 10	< 10						
PYRENE	< 10	< 10	< 10	< 10	< 10						
BUTYLBENZYLPHTHALATE	< 10	< 10	< 10	< 10	< 10						
3,3'-DICHLOROBENZIDINE	< 20	< 20	< 20	< 20	< 20						
BENZO(A)ANTHRACENE	< 10	< 10	< 10	< 10	< 10						
CHRYSENE	< 10	< 10	< 10	< 10	< 10						
BIS(2-ETHYLHEXYL)PHTHALATE	< 10	< 10	< 10	150	< 10						
DI-N-OCTYLPHTHALATE	< 10	< 10	< 10	< 10	< 10						
BENZO(B)FLUORANTHENE	< 10	< 10	< 10	< 10	< 10						
BENZO(K)FLUORANTHENE	< 10	< 10	< 10	< 10	< 10						
BENZO(A)PYRENE	< 10	< 10	< 10	< 10	< 10						
INDENO(1,2,3-CD)PYRENE	< 10	< 10	< 10	< 10	< 10						
DIBENZO(A,H)ANTHRACENE	< 10	< 10	< 10	< 10	< 10						
BENZO(G,H,I)PERYLENE	< 10	< 10	< 10	< 10	< 10						
CARBAZOLE	< 10	< 10	< 10	< 10	< 10						

ALL UNITS UG/KG

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	MW-1	MW-1D	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	Cistern	Illinois Class I Standards
INORGANICS										
ALUMINUM	<52.2	<52.2	<52.2	<52.2	56.1	<52.2	<52.2	<52.2	<52.2	--
ANTIMONY	<13.2	18.8	14	<13.2	<13.2	<13.2	<13.2	<13.2	<13.2	--
ARSENIC	6470	6480	28	<1.4	4.9	3.4	<1.4	<1.4	<1.4	50
BARIUM	122	119	81.8	100	106	91.3	38.6	81	47.2	2000
BERYLLIUM	<1	<1	<1	<1	<1	<1	<1	<1	<1	--
CADMIUM	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	5
CALCIUM	385000	371000	282000	330000	271000	291000	285000	391000	33300	--
CHROMIUM	23.7	22.4	23.2	<4.2	12.5	6.6	<4.2	<4.2	<4.2	100
COBALT	12.8	13.9	4.2	23.8	11.7	20.9	<2.8	21.6	<2.8	1000
COPPER	6	7.5	8	6.8	7.3	9	8.4	10.8	4	650
IRON	208	183	249	10400	34500	6340	15.4	6060	150	5000
LEAD	40.7	<2.4	<2.4	<2.4	<2.6	<2.4	<2.4	2.8	4.5	7.5
MAGNESIUM	158000	152000	63000	94800	103000	48500	42800	32000	6680	--
MANGANESE	1680	1620	294	4140	2800	2430	1760	3140	133	150
MERCURY	0.1	<0.1	0.86	0.17	0.87	0.18	<0.10	0.58	0.18	2
NICKEL	44	63.8	18.3	26.8	29	28	13.1	20.8	<6.8	100
POTASSIUM	4050	3690	1630	4350	8230	6950	6370	37800	5370	--
SELENIUM	<14	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	3.8	1.8	50
SILVER	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	50
SODIUM	120000	112000	17400	86400	83400	74400	121000	142000	29000	--
THALLIUM	<1	<1	<1	1.5	<10	<10	<1	<1	<1	--
VANADIUM	8.3	6.6	3.1	2.2	7.8	2.8	2	3.6	<1.8	--
ZINC	30.7	33.6	23.3	118	20.7	19.2	37.7	43.2	6.8	5000
CYANIDE	<10	<10	<10	<10	<10	<10	<10	<10	<10	200
TDS	2324000	2702000	1678000	1790000	1670000	1742000	1480000	1612000	258000	1,200,000

ALL UNITS MG/KG
- INDICATES EXCEEDANCE OF CLASS I STANDARDS

TABLE 6-1
WATER ANALYTICAL RESULTS
FORMER GREISS-PFLEGER TANNERY
COMMONWEALTH EDISON COMPANY
WAUKEGAN, ILLINOIS

	FB-GW	FB-1	FB-2	FB-3	FB-4
INORGANICS					
ALUMINUM	<52.2	<52.2	<52.2	<52.2	<52.2
ANTIMONY	<13.2	<13.2	<13.2	<13.2	<13.2
ARSENIC	<1.4	<1.4	<1.4	<1.4	<1.4
BARIUM	<1	<1	<1	<1	<1
BERYLLIUM	<1	<1	<1	<1	<1
CADMIUM	<2.8	<2.9	<2.8	<2.9	<2.9
CALCIUM	258	104	244	195	180
CHROMIUM	<4.2	<4.2	<4.2	<4.2	<4.2
COBALT	<2.8	<2.8	<2.8	<2.8	<2.8
COPPER	7.3	8.4	9.1	10	3.8
IRON	11.8	14.9	18.4	101	10.4
LEAD	3	2.4	<2.4	<2.4	<2.4
MAGNESIUM	<54.3	<54.3	<54.3	<54.3	<54.3
MANGANESE	<2.3	<2.3	<2.3	<2.3	<2.3
MERCURY	0.12	<0.1	0.13	0.11	0.16
NICKEL	<6.9	<6.8	<6.8	<6.8	<6.8
POTASSIUM	157	<101	<101	<101	<101
SELENIUM	1.4	<1.4	<1.4	<1.4	<1.4
SILVER	<2.1	<2.1	<2.1	<2.1	<2.1
SODIUM	702	281	645	1310	203
THALLIUM	<1	<1	<1	<1	<1
VANADIUM	<1.9	<1.8	<1.8	<1.8	<1.9
ZINC	40.9	7.8	52.8	29.5	40.4
CYANIDE	<10	<10	10	<10	<10
TDS	6000	N/A	N/A	N/A	N/A

ALL UNITS MG/KG