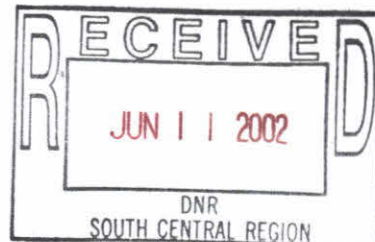


Midwest Environics, INC.

7121 Spring Hill Dr. • Middleton, Wisconsin 53562
(608) 831-8838



January 10, 2002

Reyco Madison, Inc.
Attn: David H. Reynolds
P.O. Box 528
Madison, WI 53701

Re: Phase 1 Environmental Site Assessment of the Former Town of Burke Wastewater Treatment Plant Property at 1401 Packers Avenue in the City of Madison, Dane County, Wisconsin

Dear Mr. Reynolds:

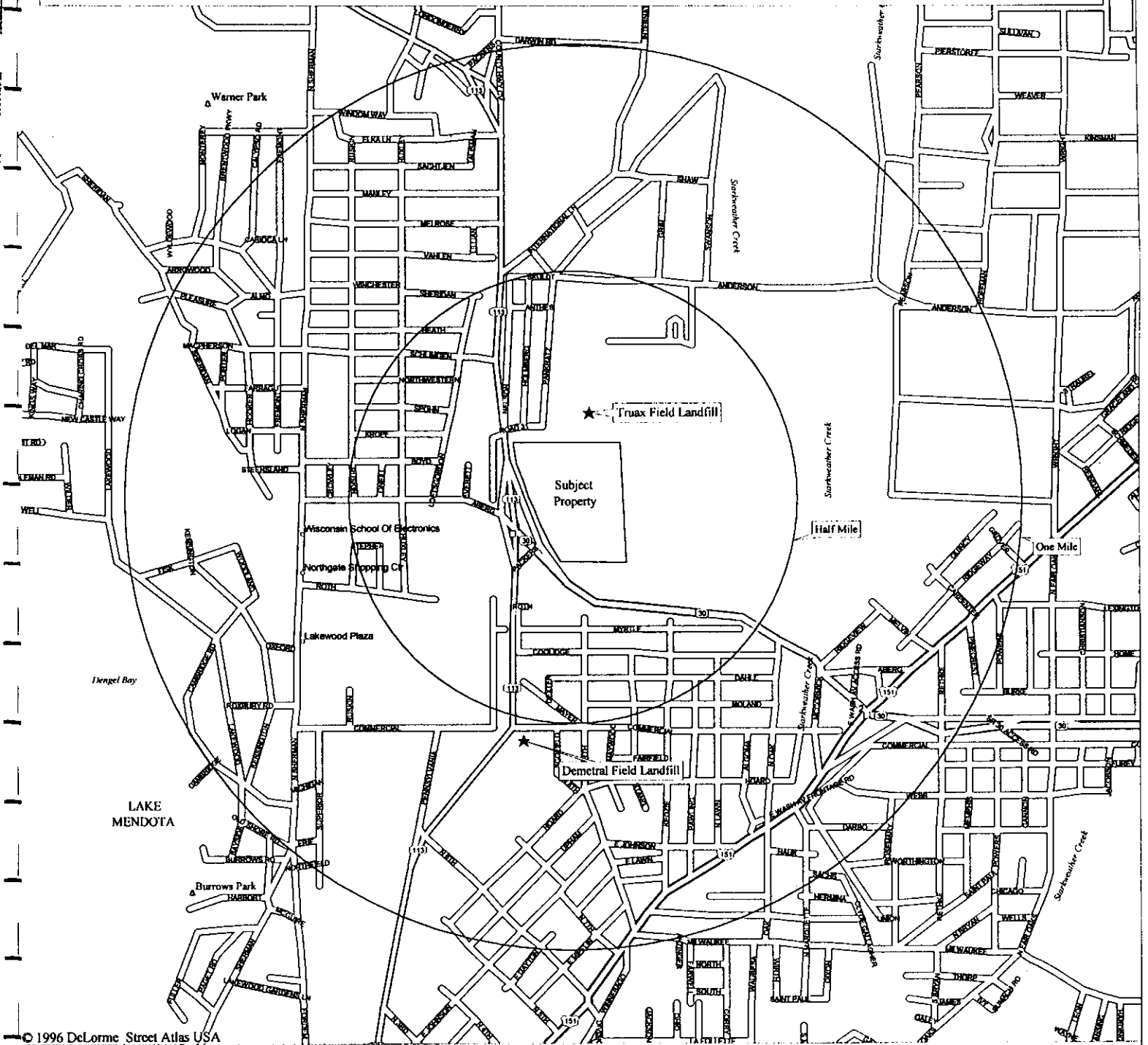
This letter is a report of my findings from the Phase 1 Environmental Site Assessment (ESA) of the former Town of Burke Wastewater Treatment Plant property at 1401 Packers Avenue in the City of Madison, Dane County, Wisconsin (i.e. the subject property; see the Site Location Map and Appendix A). The purpose of the environmental site assessment was to evaluate the property for current and historic sources of potential environmental concerns, evidence of hazardous substance disposal or releases from or onto the property, evidence of environmental threats from nearby properties and whether further investigation into the property's environmental status is warranted. This report meets the American Society for Testing and Materials (ASTM) Standard Practice for the Phase 1 ESA Process (i.e. ASTM Standard E 1527) which describes the process by which an environmental professional seeks to determine if there are "*recognized environmental conditions*" (see Appendix B) at a property.

Copies of selected photographs taken during a visit to the subject property and historic aerial photographs of the property are also included in this report.

EXECUTIVE SUMMARY

The subject property was visited on November 17, 2001. During the site visit, a walk of the property was conducted to identify any obvious items of potential environmental concern. Adjacent land uses were also noted and photographs were taken to document key observations. Documents showing the property's ownership history were acquired from the Dane County Register of Deeds Office and a current parcel map that includes the subject property was acquired from the City of Madison Engineer's Office. A file on the property's assessment history was reviewed at the City of Madison Assessor's Office and permits issued for the property were reviewed at the City of Madison Planning and Development Department. Aerial photographs of the property from 1937, 1949, 1957, 1962, 1968, 1976, 1980, 1986, 1990, 1995 and 2000 were acquired from the University of Wisconsin Geography Department Map Library and viewed for evidence of past property uses of potential environmental concern. The subject property's land use history was also discussed with 1) David Reynolds, the current owner of the property, 2) James Nemke, the Director and Chief Engineer of the Madison Metropolitan Sewerage District (MMSD), which formerly owned the subject property, 3) Donald Dencker, a former Environmental Engineer with Oscar Mayer & Company which operated the former sewage treatment plant at the subject property from 1951 until 1978, 4) Brian Gabrielse, Vice President of Intercon

Site Location Map



© 1996 DeLorme Street Atlas USA

Mag 15.00
 Fri Jan 11 08:49 2002
 Scale 1:18,750 (at center)
 2000 Feet
 500 Meters

- | | |
|---------------------------|-------------------|
| Local Road | Population Center |
| State Route | Water |
| Interstate/Limited Access | Woodland |
| US Highway | River/Canal |
| Railroad | |
| Point of Interest | |
| Park/Reservation | |
| Exit | |

Construction, Inc. regarding fill material which was brought to the subject property, and 5) Steve Schranz, Engineer with Madison Crushing and Excavating, Inc., which razed or buried most of the former wastewater treatment facilities and filled in some of the former sludge lagoons at the property.

Environmental agency information was reviewed to determine if there are any contaminated properties in the vicinity of the subject property that might represent an environmental threat to the property. Specifically, Wisconsin Department of Natural Resources (WDNR) and U.S. Environmental Protection Agency (USEPA) information on active and abandoned landfills, known contaminated sites, spills of hazardous substances and permitted hazardous waste facilities was reviewed. Additional research was also conducted to 1) review a 1980 report concerning possible future limitations on development of the property, 2) review old blueprints of improvements being made to the former wastewater treatment plant at the property in 1942 and 1963, 3) determine whether the Wisconsin Department of Commerce (WDOC) has any record of aboveground or underground petroleum storage tanks having ever been located at the subject property or at any adjacent properties, 4) review the MMSD's files concerning the former wastewater treatment plant at the subject property, and 5) review limited methane gas monitoring data and ground water monitoring data which was collected from a few locations at and near the subject property as part of the environmental monitoring of the adjacent inactive Truax Field Landfill and discussing the ongoing monitoring of the landfill with staff of the WDNR and RMT, Inc., the firm under contract to Dane County to conduct the monitoring activities.

From these research activities, it appears that the former Burke Wastewater Treatment Plant was constructed at the subject property in 1914 and was in operation at the property from 1914 - 1936 and from 1942 - June, 1978. The Burke Wastewater Treatment Plant received domestic sewage prior to 1950 when it was operated by the City of Madison, the United States of America and MMSD. From 1950 until June, 1978, Oscar Mayer leased the subject property from MMSD. During this time, the wastewater treatment plant was operated by Oscar Mayer to provide additional treatment for wastewater from the company's full-line meatpacking plant.

Before Oscar Mayer operated the wastewater treatment at the subject property, there was no discharge of effluent to the surface in the vicinity of the treatment plant and no storage of sludge in on-site sludge lagoons. From 1951 - 1976, Oscar Mayer constructed sludge lagoons in the northeast and southeast areas of the subject property and on land to the east of the property. MMSD sold the subject property to Reynolds Transfer and Storage Co., Inc. in September, 1981. The former wastewater treatment facilities were not used after June, 1978 and in the late 1980's and early 1990's, most of them were either broken up and buried at the subject property or just filled in and buried at the property. The two former sludge lagoons in the northeast area of the subject property were filled in with fill material in the late 1980's but the former sludge lagoon in the far southeast area of the property may not have been filled in with fill material.

Materials known to have been disposed at the subject property include 1) sludge in the former sludge lagoons in the northeast and southeast areas of the property, 2) ash in the northeast area of the property from Oscar Mayer's coal-fired boilers during the 1950's, 3) hog hair and toenails in the northeast area of the subject property from the slaughtering of hogs at Oscar Mayer from the early 1950's to 1978, and 4) pieces of concrete and bricks from the razing of the former wastewater treatment facilities. Fill material brought to the subject property in the 1980's and 1990's is believed to have been clean fill.

It appears that the only building at the subject property which was heated was the former sludge building which was located between the two sludge digestors at the property. Blueprints from 1942 indicate that the sludge building was initially heated by a coal-fired and a gas-fired boiler and Donald Dencker, an Oscar Mayer Environmental Engineer who was employed by Oscar Mayer from 1958 - 1991, reported that the sludge building was heated by only methane gas and natural gas by 1958.

The inactive Truax Field Landfill is located adjacent to the north side of the subject property. The landfill was an open burning dump in the 1930's and a landfill for the U.S. Army and the City of Madison from 1942 - 1972. Ground water contamination has been detected at the site and the direction of ground water flow at the site has been determined to be to the northwest. A methane gas ventilation system has also been operating at the Truax Field Landfill since the early 1990's.

A review of MMSD files for the subject property and a WDNR file of methane gas monitoring data and ground water monitoring data near the former Truax Field Landfill determined that limited soil and ground water sampling and analysis has been done at the subject property and only one methane gas probe is located at the property. The subject property appears to have first been evaluated in 1988 when a contamination evaluation of the adjacent Truax Field Landfill included 1) the installation of ground water monitoring well TG-2 along the west side of the former wastewater treatment plant facilities, 2) the collection of surface water samples in one of the former sludge lagoons at the property and from a culvert which discharged water from the former sludge lagoons to a ditch connected to Starkweather Creek, and 3) the collection of three samples of sludge from the sludge drying beds at the wastewater treatment plant. Three additional ground water monitoring wells (i.e. MW-5, MW-5A and MW-5B) were installed in the southwest area of the subject property in 1990 and the one methane gas probe (i.e. GP-17) was installed about 50 feet from the north property line in the central area of the subject property in either late 1990 or early 1991. Two additional sludge samples were collected from the southeast area of the subject property in early 1992.

The limited soil and ground water sampling and analysis which was done at the subject property in the late 1980's and early 1990's confirmed that certain soil and ground water contaminants were then present at the subject property and the ongoing collection and analysis of ground water samples from four ground water monitoring wells at the property confirms the presence of certain contaminants. Volatile organic compounds (VOCs) have not been detected in ground water samples collected from the four ground water monitoring wells at the subject property but concentrations of certain heavy metals (especially arsenic and lead) in the same ground water samples usually exceed the applicable WDNR ground water quality standards. One of the two surface water samples collected in 1988 at the subject property contained elevated levels of petroleum hydrocarbons and a trace of a VOC and the three sludge samples collected from the sludge drying beds at the property *"were found to contain varying levels of organic chemicals and indicated that solvents may have been present in sludges disposed at the former Burke Wastewater Treatment Plant"*. The two sludge samples collected in early 1992 from the southeast area of the subject property also contained 64 mg/kg and 94.3 mg/kg of lead which exceed the WDNR's soil standard for lead of 50 mg/kg for non-industrial land use classifications.

The methane gas monitoring data shows that there is usually no detectable methane gas in the one methane gas probe at the subject property and two additional methane gas probes

near the northeast and northwest areas of the subject property. However, based on discussions with staff of the WDNR and RMT, Inc. (the company conducting the environmental monitoring of the Truax Field Landfill), the low levels of methane gas in the three methane gas probes is maintained only if the methane gas extraction system surrounding the Truax Field Landfill is operating properly. A fourth methane gas probe was installed in Pankratz Street to the east of a building at 1402 Pankratz Street which is north of the northwest corner of the subject property. The fourth methane gas probe is used to monitor the level of methane gas near the building and on December 19, 2001, the level of methane gas was measured at 5.4 percent which is within the explosive range for methane. While RMT, Inc. is working to modify the methane gas extraction system which surrounds the Truax Field Landfill to reduce the lateral migration of methane, the migration of methane through the soil at the north end of the subject property is clearly a concern that must be considered in any future plans for the property.

In summary, with few exceptions the soil, ground water and methane gas data for the subject property is limited to that which has been collected primarily to evaluate the environmental impact of the adjacent Truax Field Landfill. The limited data shows that at least low levels of certain soil and ground water contaminants are present at the property and that methane gas sometimes migrates from the adjacent Truax Field Landfill into the north end of the subject property.

No other significant environmental concerns were identified during the site visit to the subject property and there have reportedly been no private water supply wells and no underground or aboveground storage tanks at the subject property. Lastly, with the exception of the adjacent Truax Field Landfill, a review of the WDNR's lists of LUST and ERP sites determined that there are no active LUST or ERP sites within about a quarter mile of the subject property. Based on these findings, **it is my professional opinion that "recognized environmental conditions" exist at the subject property and therefore, additional investigation into the property's environmental status is warranted.** The recommendations are listed on Page 30 of this report.

Below is a detailed discussion of the background and findings of this study.

BACKGROUND

Reyco Madison, Inc. is evaluating the subject property for possible development limitations. As a first step in this evaluation, Reyco Madison, Inc. retained Midwest Environics, Inc. to conduct a Phase 1 Environmental Site Assessment of the property to determine whether certain environmental liabilities might be associated with the subject property. The site visit to the subject property was conducted on November 17, 2001 by Dennis E. Strutz, Midwest Environics' Senior Environmental Specialist and a Wisconsin Certified Asbestos Inspector.

The subject property is City of Madison Parcel Number 0810-314-0097-2 (see Appendix A). The property consists of about 29.9 acres and is located in the SW ¼ of the NE ¼ of Section 31 and in the NW ¼ of the SE ¼ of Section 31, all in Township 8 North, Range 10 East in the City of Madison, Dane County, Wisconsin.

Phase 1 Environmental Site Assessment activities included the following:

- Walking the grounds of the property.
- Reviewing the history of property ownership as described in documents (see Appendix C) acquired from the Dane County Register of Deeds Office (608-266-4144), Madison, Wisconsin.
- Reviewing the assessment file for the subject property at the City of Madison Assessor's Office (608-266-4531) and copying selected information (see Appendix D).
- Reviewing permits issued by the City of Madison for the subject property at the City of Madison Planning and Development Department (608-266-4551) and copying all available information (see Appendix E).
- Reviewing a May 16, 1980 report entitled Site Evaluation, Burke Treatment Plant Property, Madison, Wisconsin prepared by Warzyn Engineering, Inc. for the City of Madison and copying that part of a site plan which shows the location of the former sewage treatment plant facilities at the subject property (see Appendix F).
- Reviewing blueprints from 1942 and 1963 for improvements to the wastewater treatment plant at the subject property.
- Discussing the property's land use history with
 - David Reynolds (608-256-2152), an owner of the subject property since 1981,
 - James Nemke (608-222-1201), Chief Engineer and Director with the MMSD, Madison, Wisconsin,
 - Donald Dencker (608-837-7479) of 1375 Musket Ridge Drive, Sun Prairie, Wisconsin, who was an Environmental Engineer with Oscar Mayer & Company when the company operated the former wastewater treatment plant at the subject property,
 - Brian Gabrielse (608-227-7473), Vice President with Intercon Construction, Inc., Madison, Wisconsin, and
 - Steve Schranz (608-249-4323), Engineer with Madison Crushing and Excavating Company, Inc., Madison, Wisconsin.
- Reviewing historic aerial photographs of the property from 1937, 1949, 1957, 1962, 1968, 1976, 1980, 1986, 1990, 1995 and 2000 that were acquired from the University of Wisconsin Geography Department Map Library (608-262-1471), Madison, Wisconsin. Copies of these aerial photographs are included in this report in Appendix G.

- Reviewing the current WDOC listings of registered aboveground and underground storage tanks in Madison, Wisconsin to determine whether the WDOC has any record of aboveground or underground storage tanks having ever been located at the subject property or at any of the properties located adjacent to the subject property.
- Reviewing the August 23, 2000 "WDNR List of Spill Sites" that lists reported spills that have occurred from January 1978 to June 2000 to determine if any spills have been reported in the vicinity of the subject property.
- Reviewing the WDNR June, 1999 Update of the "Registry of Waste Disposal Sites in Wisconsin", the WDNR February 10, 1992 "Wisconsin Remedial Response Site Evaluation Report" and a March, 1998 "List of Superfund Sites in Wisconsin" [i.e. Wisconsin Sites on the National Priorities List (NPL)] for the proximity of landfills, other waste disposal sites and known contaminated properties relative to the subject property.
- Reviewing an October 5, 2001 "WDNR Bureau for Remediation and Redevelopment Environmental Repair Program (ERP) Site Listing" and an October 5, 2001 "WDNR Bureau for Remediation and Redevelopment Leaking Underground Storage Tank (LUST) Site Listing" to determine if there are any listings of active contaminated sites within about a quarter mile of the subject property.
- Reviewing the MMSD's files concerning the former Burke Wastewater Treatment Plant at the subject property and past soil and ground water sampling and analysis conducted at the property and copying selected information from their files (see Appendix H).
- Reviewing the WDNR Chapter NR 720 Soil Cleanup Standards as they relate to past concentrations of certain heavy metals found in the soil at the subject property (see Appendix I).
- Reviewing methane gas monitoring data and ground water monitoring data for the adjacent inactive Truax Field Landfill (see Appendix J) and discussing the monitoring with Mark Harder (608-275-3324), Waste Management Environmental Engineer at the WDNR South Central Region Office, Fitchburg, Wisconsin.
- Reviewing the WDNR Chapter NR 140 Ground Water Quality Standards as they relate to past concentrations of certain heavy metals found in the ground water at the subject property (see Appendix K).
- Contacting Curtis Madsen (608-831-4444), P.E. and Senior Project Manager with RMT, Inc., Madison, Wisconsin, to discuss the subject property and the status of the environmental monitoring of the inactive Truax Field Landfill which they are conducting for Dane County.
- Reviewing a June 28, 1993 USEPA listing of Resource Conservation and Recovery Act (RCRA) hazardous waste transporters and Treatment, Storage

and Disposal (TSD) facilities in Wisconsin to determine if any permitted hazardous waste TSD facilities are located within one mile of the subject property.

No environmental sampling was conducted as part of this study.

FINDINGS

Location

1. The subject property (see Photos 1 - 11) is located at the northeast corner of the intersection of Aberg Avenue and Packers Avenue in the City of Madison, Dane County, Wisconsin (see Appendix A). The property consists of about 29.9 acres and the address for the property is 1401 Packers Avenue. North of the northwest area of the subject property is Pankratz Street and a new one-story office building at 1402 Pankratz Street which is owned by The Rifken Group but located on land leased from Dane County (see Photo 12). North of about the middle third of the subject property is part of the Bridges Golf Course on land owned by Dane County and north of about the northeast area of the subject property is the inactive Truax Field Landfill (see Photo 13). East of about the northern half of the subject property is another part of the Bridges Golf Course on land owned by Dane County (see Photo 14). East of about the southern half of the subject property is the Copps Food Center at 2502 Shopko Drive (see Photo 15). South of the subject property is the west end of Shopko Drive and vacant land. West of the southwest area of the subject property is Aberg Avenue and west of the northwest area of the subject property is Packers Avenue (see Photo 16).

Property History

2. The following summary of the property's ownership history is based on a review of documents dating back to 1910 (see Appendix C) that were acquired from the Dane County Register of Deeds Office, Madison, Wisconsin:
 - 1910 - August 20; Clements Affholder and his wife, Anna Affholder, deeded the South $\frac{1}{2}$ of the SW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 31 and the North 20 acres of the West $\frac{1}{2}$ of the SE $\frac{1}{4}$ of Section 31, all in Township 8 North, Range 10 East in the Town of Burke, Dane County, Wisconsin (which included the subject property) to the City of Madison. (Volume 229 of Deeds, Page 208)
 - 1911 - June 21; A.C. Hoppmann, as special guardian of Anton Affholder, Walter Affholder, Joseph Affholder, Clements Affholder and John Affholder, all infants, deeded their ownership interests in the South $\frac{1}{2}$ of the SW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 31 and the North 20 acres of the West $\frac{1}{2}$ of the SE $\frac{1}{4}$ of Section 31, all in Township 8 North, Range 10 East in the Town of Burke, Dane County, Wisconsin (which included the subject property) to the City of Madison. (Volume 166 of Deeds, Page 467)
 - 1933 - June 14; The City of Madison deeded sewage treatment plants and other sewage disposal properties to the Madison Metropolitan Sewerage District

- (MMSD). One of the properties deeded to MMSD was the "*Burke Plant*" property. The property consisted of the South ½ of the SW ¼ of the NE ¼ of Section 31 and the North 20 acres of the West ½ of the SE ¼ of Section 31, all in Township 8 North, Range 10 East in Dane County, Wisconsin (which included the subject property). (Volume 360 of Deeds, Pages 211 - 216)
- 1942 - July 29; The MMSD deeded the South ½ of the SW ¼ of the NE ¼ of Section 31 and the North 20 acres of the West ½ of the SE ¼ of Section 31, all in Township 8 North, Range 10 East in Dane County, Wisconsin (which included the subject property) to the United States of America. The MMSD also granted the United States of America the right to use the "*outfall sewer which extends from said described premises to the Yahara River*" while they owned the Burke Plant. The deed included a clause which stated that "*if and when the United States of America shall permanently cease to use said described premises for receiving, treating and disposing of sewage as aforesaid, the title to said described premises, including said sewage disposal plant, will revert to and vest in the Madison Metropolitan Sewerage District*". (Volume 436 of Deeds, Pages 271 - 273)
- 1943 - June 2; The City of Madison deeded their rights and interests in the South ½ of the SW ¼ of the NE ¼ of Section 31 and the North 20 acres of the West ½ of the SE ¼ of Section 31, all in Township 8 North, Range 10 East in Dane County, Wisconsin (which included the subject property) to the United States of America. (Volume 436 of Deeds, Pages 266 - 268)
- 1950 - April 4; Herbert O. Lord, the Chief Engineer and Director of the MMSD, recorded an affidavit in the Dane County Register of Deeds Office which stated that "*in the year 1946, and prior to the end of October, 1946, [the] United States of America permanently ceased to use said described premises, being the premises hereinbefore described, for receiving, treating and disposing of sewage*" and that on or about November, 1, 1947, the MMSD took possession of the premises by virtue of the reverter clause in the July 29, 1942 deed and since November 1, 1947, title to the South ½ of the SW ¼ of the NE ¼ of Section 31 and the North 20 acres of the West ½ of the SE ¼ of Section 31, all in Township 8 North, Range 10 East in Dane County, Wisconsin (which included the subject property) reverted back to the MMSD. (Volume 229 of Miscellaneous, Pages 40 and 41)
- 1981 - September 15; The MMSD deeded the subject property to Reynolds Transfer and Storage Co., Inc. (Volume 3316 of Records, Page 3)
- 1981 - December 30; Reynolds Transfer and Storage Co., Inc. deeded the subject property to Edward S. Reynolds and David H. Reynolds. (Volume 3316 of Records, Page 4)
- 1984 - September 1; Edward S. Reynolds and David H. Reynolds deeded the subject property to Reyco Madison, Inc. (Volume 6077 of Records, Page 90)

3. A review of the City of Madison's assessment file for the subject property determined the following (see Appendix D):
 - A. The oldest property card for land that included the subject property is from 1924. The card indicates that the property was then owned by the City of Madison.
 - B. Property cards from 1934 - 1942, 1943 - 1949 and 1950 - 1961 for land that included the subject property indicate that the property was then owned by the MMSD. Notations on the two older property cards identified the property as the "*Burke Sewerage Plant*".
 - C. A property card from 1962 - 1981 indicates that the property was zoned M-1, Industrial and that by the end of 1981, the property was owned by Edward S. Reynolds and David H. Reynolds. The 1962 - 1981 property card also lists the subject property as then containing about 29.9 acres.
 - D. All of the property cards covering the years 1924 - 1981 indicate that land which then included the subject property was exempt from property taxes. This explains why there is little descriptive information about any improvements that were at the property from 1924 - 1981.
 - E. From 1982 - 1994, the assessed value of the subject property did not change. A notation in the file dated March, 1994, indicates that David and Edward Reynolds raised concerns about the buildability of the property but that David Benzschawel, the Madison City Engineer, stated that the property was buildable. Since 1995, the assessed value of the subject property has risen substantially. Another notation states that there was a request in 1990 for access to the subject property to check the property for contamination from the former landfill (i.e. the adjacent Truax Field Landfill) and that, "*No contamination was found.*"
 - F. An April 20, 1990 letter from the Madison City Attorney's Office to Reyco Madison, Inc. stated that the subject property "*is a part of the former Burke Sewer Treatment Plant facility which is the partial subject of a proposed Department of Natural Resources Consent Order to investigate possible environmental contamination of the soils and ground water at the site and at the adjacent former Truax Landfill*".
 - H. Numbers 8, 9 and 10 in the proposed consent order state that, 1) "*Adjacent to the Truax Landfill is an area formerly known as the Burke Sewage Treatment Plant*", 2) "*The City of Madison constructed the plant and operated it from 1914 to 1933*", 3) "*The Madison Metropolitan Sewerage District owned and operated the plant from 1933 to 1936 when the plant was inactivated*", 4) "*The United States of America condemned and took the site by warranty deed in 1942, using the plant to treat and dispose of sewage from Truax Field between 1942 and 1946*", 5) "*The plant reverted to the District in 1947 after a period of operation by the City*", 6) "*Oscar Mayer and Company began using the facility starting in 1950 and entered into a lease dated September 7, 1951 for pretreatment of wastewater from its meat packing plant*", 7) "*A new*

agreement was executed for a term of 25 years commencing January 1, 1961", 8) "The company discontinued operation in 1978 and the lease terminated in 1979", 9) "The District sold the site and plant facilities in 1981 to Reynolds Transfer and Storage Company", 10) "The current owners of the property are Shopko Stores, Inc. and Reyco Madison, Inc.", and 11) "Land disposal of sewage waste, including irrigation fields or sludge lagoons, occurred at the Burke Sewage Treatment Plant".

- I. Current assessment file information for the subject property indicates that it contains about 29.9 acres and the property is vacant land which is zoned M-1, industrial.
4. A review of documents in the records of the City of Madison Planning and Development Department identified the following additional items of interest concerning the subject property (see Appendix E):
 - A. On June 26, 1987, a permit was issued to Reyco Madison, Inc. to *"Remove Concrete Tanks & Structures"* at the subject property. The name of the contractor doing the work for Reyco Madison, Inc. was Madison Crushing and Excavating.
 - B. December 29, 1987, Reyco Madison, Inc. was directed to *"Apply for and obtain a land disturbing, filling, erosion control permit for the land filling activity going on at 1401 Puckers Avenue"*. This order was given after City of Madison staff observed a truck hauling fill material to the subject property. A notation dated December 23, 1987 states that, *"Red Truck Hauled Dirt in - came out empty"*.
 5. A May 16, 1980 report entitled Site Evaluation, Burke Treatment Plant Property, Madison, Wisconsin which was prepared by Warzyn Engineering, Inc. for the City of Madison was reviewed for general historical information about the subject property and general statements about future limitations on development of the property. A review of the 1980 Warzyn Engineering report identified the following items of interest:
 - A. *"The Burke Waste Treatment Plant was first constructed about 1915 and consisted of sedimentation tanks, sludge beds, and trickling filters. The treatment plant was owned and operated by the City until 1928 when replacement treatment facilities were constructed. The facility was shut down until 1942, when modifications were made by the U.S. Army and operations continued until the 1950's. Modifications included the addition of the sludge building and digester tanks, final settling tanks and alteration of the sedimentation tanks, and the trickling filters. In 1963 two final clarifiers were added and the trickling filters [were] further modified by the Oscar Mayer Company and treatment operations continued until 1979 when the plant was taken out of service."* The major structures of the former wastewater treatment facility are shown in a site plan in Appendix F.
 - B. *"The site is relatively flat, except for a sloped area between the higher ground surface elevations located at the northwest section of the site and the*

remaining areas. Shallow lagoons have been constructed along the east sections of the property. Existing abandoned waste treatment facilities are located in the central portion of the site. These structures generally consist of near grade or below grade facilities previously used for sewage treatment."

- C. The intent of the report was *"to provide a general evaluation of the subsurface conditions and provide preliminary recommendations for site preparation and foundation design should the site be developed for building purposes"*. Therefore, the report includes a discussion of the three types of subsoils at the site and the results of soil borings that were made at the property. In general, the subsoils in Areas 1 and 2 at the site (which are both located in about the northeast quarter of the subject property) were identified as having the greatest limitations for building construction (see Appendix F).
- D. Approaches discussed to eliminate limitations for future building construction in Areas 1 and 2 at the subject property included 1) fill placement to raise site grades above flood elevation and provide for surface drainage, 2) surcharging to prepare specific areas for support of lightly loaded buildings, 3) deep foundations to minimize the potential for post construction settlement, and 4) excavation of subsoils in certain areas and filling in those areas with compacted granular fill. Area 3, which covers the major portion of the site, was deemed to be the most suitable for future building construction. The two primary limitations for building construction in Area 3 were thought to include variable thicknesses of fill material over the area and the existence of the abandoned wastewater treatment facilities. Excavations in the range of 5 to 13 feet were thought to be necessary to demolish and remove the abandoned wastewater treatment facilities from the subject property.
- E. The adjacent inactive Truax Field Landfill was also briefly discussed in the Warzyn Engineering report. *"The proximity of the abandoned landfill to the north property line of this site presents a potential for methane gas migration from the landfill into and through the adjacent subsoils. Gas migration will be most extensive through the granular soils above the ground water level and could contribute to potential fire hazards, especially in below grade areas such as basements. Gas detection wells installed along the landfill would provide data regarding methane concentrations so that an evaluation of potential problems could be made. Methane gas may also be present in the organic soils underlying Areas I and II, and consideration must be given to the possible effects on buildings constructed in these areas. Venting systems may be necessary to protect structures near the landfill."*
- F. The report included four recommendations *"to finalize foundation recommendations for future structures"*. One of these recommendations was that gas detection wells should be installed to measure in-ground methane concentrations at the subject property.

6. Blueprints from 1942 and 1963 for improvements to the wastewater treatment plant at the subject property were obtained from David Reynolds of Reyco Madison, Inc. A review of these blueprints identified the following items of interest:
 - A. The 1942 blueprints were prepared under contract for the U.S. Army Technical Training Command Radio School, Madison, Wisconsin. The blueprints indicate that 1) the northernmost part of the treatment facility at the subject property were the primary settling tanks (referred to as the sedimentation tanks in the 1980 Warzyn Engineering report; see Appendix F), 2) two new sludge digesting tanks with floating covers and a new sludge building between the two new sludge digesting tanks were to be constructed to the south of the primary settling tanks, 3) a new road heading to the northeast was to be constructed along the north side of the trickling filter, and 4) new final settling tanks were to be constructed to the southeast of the existing sludge drying beds at the property.
 - B. The 1942 blueprints also indicated that the new sludge building at the subject property had a first floor and a basement. There were four rooms on the first floor of the building which included 1) a chlorine room, 2) a water closet (i.e. restroom), 3) a work room, and 4) an office and laboratory. Items planned to be included on the first floor included a workbench in the work room and a desk, two chairs, a file cabinet, a supply cabinet, a lab table with sink, an oven and a furnace.
 - C. The 1942 blueprints show that two boilers and a hot water heater were to be located in the basement of the sludge building. One of the boilers was a "Gas Fired Boiler" and the other boiler was a "Coal Fired Boiler". Radiators were to be installed to heat the sludge building.
 - D. The 1963 blueprints were prepared by Oscar Mayer & Co., General Planning & Engineering Div. and describe the planned construction of two final clarifiers and a lift station near the southern end of the existing sludge drying beds at the property.
 - E. The 1963 blueprints show that there then six sewage lagoons associated with the sewage treatment plant at the subject property. Four of the sewage lagoons were located to the northeast of the trickling filter and were numbered 1 - 4 from east to west. Sewage lagoons 5 and 6 were located to the east and southeast of the trickling filter. Only sewage lagoons 3 and 4 appear to have been located at the subject property with sewage lagoons 1, 2, 5 and 6 all being located to the east of the subject property. The present Copps store appears to have been constructed generally where sewage lagoons 5 and 6 were formerly located.
 - F. There is no indication in either the 1942 or the 1963 blueprints that any underground fuel oil tanks or other underground petroleum storage tanks were located at the subject property or were planned for installation at the property.

7. The subject property's land use history was briefly discussed with David Reynolds of Reyco Madison, Inc., the current owner of the subject property. In response to specific questions, Mr. Reynolds stated the following:
 - A. A few unheated metal sheds and the former Burke Wastewater Treatment Plant facilities were located at the subject property when Reynolds Transfer and Storage Company, Inc. bought the property in 1981. In the late 1980's and early 1990's, the metal sheds were taken down, and all of the former sewage treatment plant facilities except the concrete sludge drying beds were razed and buried at the property or were filled in and buried at the property. Former sewage lagoons at the subject property were also closed by filling them in with fill material brought to the property by Madison Crushing and Excavating. Gabe's Construction also may have brought fill material to the subject property.
 - B. Wingra Stone is storing a large pile of pieces of concrete at the subject property. At some future date, a crusher will be brought to the property to grind the concrete into small pieces. The small pieces of concrete will then likely be used to grade the property.
 - C. To the best of his knowledge, no underground petroleum storage tanks were ever located at the subject property.
8. A meeting was held with James Nemke, Chief Engineer and Director with the MMSD, Madison, Wisconsin to discuss his knowledge of the subject property's land use history. Mr. Nemke explained that he is 55 years old, was a Research and Operations Engineer with the MMSD from 1972 to 1976, and has been the Chief Engineer and Director with the MMSD since 1976. In response to specific questions, Mr. Nemke stated the following:
 - A. MMSD's files for the Burke Wastewater Treatment Plant include a fact sheet that describes the operation of the plant. The fact sheet indicates that the Burke Wastewater Treatment Plant was constructed by the City of Madison in 1914. The plant was 1) used to treat domestic sewage from 1914 - 1933 by the City of Madison, 2) used to treat domestic sewage from 1933 - 1936 by MMSD, 3) inactive from 1937 until 1942 when it was taken over by the United States of America during World War II, 4) reconditioned by the United States of America during 1942 and used by the federal government to treat domestic sewage from Truax Field from October 1942 - October 1946, 5) acquired by MMSD in October 1947 under the reverter clause of the 1942 warranty deed which transferred ownership of the wastewater treatment plant to the United States of America, and 6) operated by MMSD from October 1947 - May 1950 to treat domestic sewage which could not be transported to the Nine Springs Wastewater Treatment Plant. From 1914 - May 1950, there was no discharge of effluent to the surface in the vicinity of the plant and no storage of sludge in on-site lagoons.
 - B. From May 1950 until June 1978, the Burke Wastewater Treatment Plant was used by Oscar Mayer for pretreatment of wastewater from their meatpacking plant. During the period 1951 - 1961, six sludge lagoons were constructed

by Oscar Mayer near the plant. Four of these lagoons were on land that is now located to the east of the Reyco Madison, Inc. property (i.e. the subject property) and two of the lagoons were in the northeast area of the subject property. Oscar Mayer also constructed a seventh sludge lagoon in the southeast area of the subject property in 1968. Therefore, sludge was disposed in the former sludge lagoons at the subject property during the years that Oscar Mayer operated the wastewater treatment plant.

- C. During the entire time of its operation, the Burke Wastewater Treatment Plant did not receive storm water and the plant provided only primary and secondary treatment. Primary treatment was provided in the settling tanks and sedimentation tanks and secondary treatment was provided in the trickling filter.
 - D. The digestion process which occurred in the sludge digester tanks at the property was an anaerobic process and resulted in the organic sludge being converted to methane, carbon dioxide and an inoffensive humuslike material. The methane gas was likely used to fuel the gas-fired boiler which was located in the basement of the sludge building and excess methane gas would have been burned off.
 - E. To the best of his knowledge, there were no underground or aboveground petroleum storage tanks at the subject property.
 - F. In the late 1980's and early 1990's, some soil and ground water sampling and analysis was conducted at the subject property as part of an evaluation of the environmental impact of the former Truax Field Landfill. During those years, attempts were being made to identify parties which contributed to the contamination at the former Truax Field Landfill and which were therefore financially responsible to contribute to the cost of any necessary remediation of the landfill. At one point, it was alleged that past disposal of sludge in sludge lagoons at the Burke Wastewater Treatment Plant contributed to contamination at the landfill but nothing ever came of this allegation and the Madison Metropolitan Sewerage District was never named as a responsible party for the Truax Field Landfill contamination. Since about the mid-1990's, Dane County has been the ~~sole~~ responsible party for the former Truax Field Landfill.
9. Because Oscar Mayer & Company operated the plant for many years, Donald Dencker, a former Environmental Engineer with Oscar Mayer & Company was contacted to discuss his knowledge of the subject property. Mr. Dencker explained that he is 77 years old, worked for Oscar Mayer & Company from 1958 until he retired in 1991 and was responsible for operation of the former Burke Wastewater Treatment Plant at the subject property from 1958 until 1964. In response to specific questions, Mr. Dencker stated the following:
- A. When he started working for Oscar Mayer in 1958, the company was already operating the Burke Wastewater Treatment Plant to provide additional treatment for wastewater from the company's meatpacking plant. Oscar Mayer then operated a full-line meatpacking plant which included the

slaughtering of lambs, sheep, calves, cows and hogs. A pretreatment plant had been constructed at the Oscar Mayer meatpacking plant sometime in the 1930's but by the 1950's, the meatpacking plant had grown so much that additional wastewater treatment capacity was needed by the company. The small stock kill operation at the meatpacking plant ended in the early 1960's, the beef kill operation ended in about 1975, and the hog kill operation ended in about 1980. Therefore, by late 1978 when Oscar Mayer ceased operating the Burke Wastewater Treatment Plant, the company's own treatment plant was adequate for their wastewater treatment needs.

- B. The reason that Oscar Mayer constructed the sludge lagoons at the subject property and on land to the east of the subject property was that the Burke Wastewater Treatment Plant was producing more sludge than the sludge digestors at the property could handle.
- C. Oscar Mayer used to raise canary grass on the land to the east and northeast of the subject property which extended north to Anderson Street and east to Pearson Street. The approximate 50 acres of canary grass was irrigated with wastewater from the Burke Wastewater Treatment Plant. By irrigating the canary grass with effluent from the wastewater treatment plant, Oscar Mayer saved money on their sewage bill from MMSD.
- D. Sludge was disposed in the former sludge lagoons at the subject property and at land now owned by Copps Food Center east of the subject property. He understands that Copps had all of the sludge removed from their property and hauled to agricultural fields before they constructed their grocery store.
- E. By 1958, the former coal-fired boiler which had been in the basement of the sludge building was gone and the sludge building and the sludge digestors were heated by the gas-fired boiler only. The gas-fired boiler then burned both methane gas from the sludge digestors and natural gas which was piped to the subject property. To the best of his knowledge, the boiler in the basement of the sludge building never burned fuel oil and there were no aboveground or underground petroleum storage tanks at the subject property.
- F. In the 1970's, sulfur bacteria somehow got into the sludge lagoons at the subject property and caused a stench of sulfur gas. A perfume system was then installed in an attempt to mask the sulfur smell. The system consisted of pipes and vaporizers which were attached to the chain link security fence at the property.
- G. In addition to the sludge which was disposed in the sludge lagoons at the subject property, Oscar Mayer also buried ash and hog hair and toenails at the subject property. The ash was from the coal-fired boilers at the Oscar Mayer plant and the hog hair and toenails was from their hog-killing operation. The ash from the coal-fired boilers was disposed at the subject property prior to 1958 when the sludge lagoons were constructed in the northeast area of the subject property. The ash was primarily used to prepare roads to the north and northeast of the Burke Wastewater Treatment Plant facilities at the property. He estimated that the ash was disposed in an area

that was to the northeast of the wastewater treatment plant's trickling filter and about 250 feet east of the western chain link security fence. The hog hair and toenails were also disposed in the northeast area of the subject property.

10. Brian Gabrielse, Vice President with Intercon Construction, Inc., Madison, Wisconsin, was contacted concerning the past disposal of fill material at the subject property. Mr. Gabrielse explained that his father was a part owner of Gabe's Construction until about 1985 when the company was dissolved. He added that Intercon Construction was started in 1985 and continued to install underground utilities such as underground natural gas and electric lines which was the same type of work usually done by Gabe's Construction. He was not familiar with the possible past disposal of fill material at the subject property by Gabe's Construction but said that the fill material would have been from the installation of underground utilities. He explained that current Intercon Construction employees are instructed to shut down an excavation if they encounter petroleum-contaminated soil and assuming Gabe's Construction operated in a similar fashion, the fill material brought to the subject property was likely clean fill.
11. Steve Schranz, Engineer with Madison Crushing and Excavating Company, Inc., Madison, Wisconsin, was also contacted concerning his knowledge of the subject property. Mr. Schranz explained that he is 70 years old and has been employed by Madison Crushing and Excavating for the past 41 years. He recalled that in the late 1980's and early 1990's Madison Crushing and Excavating removed the sludge building and sludge digestors and filled in most of the other former Burke Wastewater Treatment Plant facilities at the subject property with fill material from construction projects in the downtown Madison area. Mr. Schranz said that no concrete or sludge was hauled from the subject property. Instead, the concrete pieces were buried on-site and fill material was placed in the former sludge lagoons at the property. Mr. Schranz also added that he knew that the Copps Food Store to the east of the subject property *"is built on a lot of fill material"*.
12. Aerial photographs of the property from 1937, 1949, 1957, 1962, 1968, 1976, 1980, 1986, 1990, 1995 and 2000 were acquired from the University of Wisconsin Geography Department Map Library, Madison, Wisconsin and viewed for evidence of past property uses of potential environmental concern. Each original aerial photograph was examined using a loupe that provided a ten-times magnification of the photographs and each photograph was enlarged from about 200 to 400 percent on a color laser copier.

A review of the eleven aerial photographs (see Appendix G) reveals the following information.

- A. The 1937 aerial photograph shows the subject property before the waste treatment plant was reconditioned by the United States of America in 1942. The 1937 aerial photograph shows the sedimentation tanks, the trickling filter and the sludge beds which were then at the property. Based on the use history of the former Burke Wastewater Treatment Plant, it was not in service in 1937.

- B. The 1949 aerial photograph shows the subject property about two years after ownership of the property reverted to MMSD. As in the 1937 aerial photograph, one can see the sedimentation tanks, the trickling filter and the sludge beds which were then at the property. One can also see the sludge building and digester tanks and the final settling tanks which the United States of America had constructed at the property in 1942. The 1949 aerial photograph also shows that there were then two narrow North-South oriented storage buildings located in the northwest area of the subject property, storage warehouses were located to the north of the northwest corner of the subject property and the Truax Field Landfill to the north of the property was then an active waste disposal site.
- C. The 1957 and 1962 aerial photographs show the subject property during the time that Oscar Mayer operated the wastewater treatment plant at the property. With one exception, in both aerial photographs, the wastewater treatment facilities appear the same as they did in 1949. The exception is that both the 1957 and 1962 aerial photographs show the sludge lagoons which Oscar Mayer constructed at the subject property and on land to the east of the subject property. The 1957 aerial photograph shows Sludge Lagoons 1 - 4 (numbered from East to West) to the northeast of the trickling filter at the subject property. One can see that in 1957, Sludge Lagoons 1 and 2 were then located on land that is to the east of the northeast area of the subject property and Sludge Lagoons 3 and 4 were in the northeast area of the property. The 1962 aerial photograph is similar to the 1957 aerial photograph except that it shows that between 1957 and 1962, Sludge Lagoons 5 and 6 were constructed on land to the east of the southeast area of the subject property.
- D. The 1957 aerial photograph shows that between 1949 and 1957, the two narrow storage buildings that were located in the northwest area of the subject property were razed. The 1957 and 1962 aerial photographs also show the storage warehouses that were then located to the north of the northwest corner of the subject property and that the Truax Field Landfill to the north of the subject property was then a very active waste disposal site.
- E. The 1968 aerial photograph shows the final clarifiers which were constructed at the subject property in 1963 next to the final settling tanks and the area to the east and southeast of the trickling filters where Sludge Lagoon 7 was reportedly constructed at the property in 1968. The former active disposal area of the Truax Field Landfill is also clearly shown in white to the north of the subject property. Lastly, one can see that between 1962 and 1968, Aberg Avenue was constructed a short distance to the south and southwest of the subject property.
- F. The 1976 aerial photograph shows that between 1968 and 1976, Sludge Lagoons 1 and 2 which had been located to the east of the northeast area of the subject property, had been filled in. Sludge Lagoons 3 and 4 are evident in the northeast area of the subject property. Sludge Lagoon 7 is evident in the southeast area of the subject property and Sludge Lagoons 5 and 6 are evident to the east of the southeast area of the subject property. Two

additional sludge lagoons also appear to be located to the east of Sludge Lagoon 6 on land which is today owned by Shopko. The 1976 aerial photograph also shows that between 1968 and 1976, the Truax Field Landfill to the north of the subject property became an inactive site.

- G. The 1980 aerial photograph shows the subject property about 17 months before MMSD sold the property to Reynolds Transfer and Storage Company, Inc. Both the 1980 and 1986 aerial photographs show the abandoned Burke Wastewater Treatment Plant facilities before they were removed or filled in with fill material. In both aerial photographs one can clearly see that the northwest area of the subject property was generally vacant land, the northeast area and the far southeast area of the property were old sludge lagoons, and the abandoned wastewater treatment facilities were generally located in the central and southwestern areas of the property. By comparing the 1980 and 1986 aerial photographs, one can see that the Shopko building appears to have been partially constructed where a sludge lagoon was once located and the Shopko parking lot is on top of a former sludge lagoon.
- H. The 1990 aerial photograph shows the subject property after most of the former wastewater treatment plant facilities were either removed or filled in. The outline of the former sedimentation tanks and the sludge beds are evident and the location of the former trickling filter can also be seen. The April 1990 aerial photograph also shows that by then the two former sludge lagoons in the northeast area of the subject property had been filled in and the former sludge lagoon in the far southeast area of the property had not been filled in.
- I. The 1995 and 2000 aerial photographs appear to show that the former sludge lagoon in the far southeast area of the subject property was not filled in. The 2000 aerial photograph shows that 1) fill material had been brought to the central area of the subject property between 1995 and 2000, 2) the Bridges Golf Course was constructed to the north of the subject property and east of the northeast area of the property between 1995 and 2000, and 3) the Cops Food Center was constructed to the east of the southeast area of the subject property between 1995 and 2000.

In summary, based on the above research concerning the property's history, it appears that

- the former Burke Wastewater Treatment Plant was in operation at the subject property from 1914 - 1936 and from 1942 - June, 1978,
- the former Burke Wastewater Treatment Plant received domestic sewage prior to 1950 when operation of the wastewater treatment plant was taken over by Oscar Mayer which leased the plant from MMSD,
- from 1950 - June, 1978, Oscar Mayer used the former Burke Wastewater Treatment Plant to provide additional treatment for wastewater from the company's full-line meatpacking plant which then included the slaughtering of lambs, sheep, calves, cows and hogs,
- the former Burke Wastewater Treatment Plant provided only primary and secondary treatment of wastewater,

- no stormwater was apparently ever discharged to the former Burke Wastewater Treatment Plant,
- the former sludge building, which was constructed at the subject property in 1942, was heated by coal, natural gas, and methane gas recovered from the sludge digestors,
- from 1914 - May 1950, there was no discharge of effluent to the surface in the vicinity of the former Burke Wastewater Treatment Plant and no storage of sludge in on-site sludge lagoons,
- during the periods 1951 - 1961 and 1968 - 1976, Oscar Mayer constructed sludge lagoons at the subject property and on land to the east of the subject property because the wastewater treatment plant was producing more sludge than the sludge digestors at the plant could handle,
- two sludge lagoons (i.e. Sludge Lagoons 3 and 4) were located in the northeast area of the subject property from the early 1950's to 1978 and one sludge lagoon (i.e. Sludge Lagoon 7) was located in the far southeast area of the subject property from 1968 - 1978,
- in the late 1980's and early 1990's, most of the former brick and concrete sewage treatment plant facilities were razed and disposed at the property or were filled in with fill material and buried at the property,
- the former sludge lagoons in the northeast area of the subject property were filled in with fill material but the former sludge lagoon in the far southeast area of the property may not have been filled in with fill material,
- no sludge from the former sludge lagoons or pieces of concrete from the razing of the former wastewater treatment facilities was reportedly hauled away from the subject property,
- fill material which is believed to have been clean fill was reportedly brought to the subject property in the 1980's and 1990's by Gabe's Construction and by Madison Crushing and Excavating,
- materials known to have been disposed at the subject property include sludge in the former sludge lagoons in the northeast and southeast areas of the property, ash in the northeast area of the property from Oscar Mayer's coal-fired boilers during the 1950's, hog hair and toenails in the northeast area of the subject property from the slaughtering of hogs at Oscar Mayer from the early 1950's to 1978, and pieces of concrete and bricks from the razing of the former wastewater treatment facilities,
- adjacent to the north side of the subject property is the inactive Truax Field Landfill which was a waste disposal site from about 1948 to 1972,
- in the late 1980's and early 1990's, some soil and ground water sampling and analysis was conducted at the subject property as part of an evaluation of the environmental impact of the former Truax Field Landfill,
- Wingra Stone is currently storing a large pile of pieces of concrete at the subject property, and
- no underground or aboveground petroleum storage tanks have apparently been located at the subject property.

Observations and Discussions

13. During the November 17, 2001 visit to the subject property, a walk of the property resulted in the following additional observations:
 - A. A chain link fence encloses the former wastewater treatment plant area at the subject property. The southeast, northeast and northwest areas within the chain link fence are covered with grasses, weeds, and trees (see Photos 1 - 4). The far western and far southern areas of the property, which are both outside of the area that is enclosed by the chain link fence, are vacant land only (see Photos 5 - 8). Fill material has been spread out in the center portion of the subject property, a large pile of concrete pieces is currently being stored at the property (see Photos 9 - 11), and a pile of fill material is just north of the chain link fence near the south side of the property.
 - B. About five feet north of the northeast corner of the subject property is methane gas probe GP-16R. The only methane gas probe that was observed at the subject property is GP-17 which is about 50 feet south of the northern property line in a grassy area in the middle of the subject property (see Photo 2).
 - C. Four ground water monitoring wells were observed at the subject property. These include TG-2 which is located a few feet west of the chain link fence and west of the former wastewater treatment plant facilities. A metal plate in concrete at the base of the TG-2 identifies it as an Army Corps of Engineers well which was installed in June, 1988. Three additional ground water monitoring wells which are labeled MW-5, MW-5A and MW-5B are located in the far southwest area of the subject property (see Photo 17).
 - D. The only evidence of the former Burke Waste Water Treatment Plant that was observed at the subject property included the sludge beds (see Photo 18) and an unknown pipe to the west of the northwest corner of the sludge beds (see Photo 19).
 - E. Someone has disposed of a boat and a plastic chair at the subject property (see Photo 20). The boat and chair are located in the central part of the property. Twelve quarts of waste oil are also inside the boat.
 - F. There were no pole-mounted or pad-mounted electrical transformers at the subject property.

In summary, the items of potential environmental concern identified during the site visit included 1) the methane gas probe at the property and the additional methane gas probe a few feet north of the northeast area of the subject property, and 2) the four ground water monitoring wells at the property.

14. A review of the current WDOC listings of registered aboveground and underground storage tanks in Madison determined that the WDOC has no record of aboveground or underground storage tanks having ever been located at the subject property or at any of the adjacent properties.

Review of WDNR and USEPA Information

15. A review of the August 23, 2000 "WDNR List of Spill Sites" that lists reported spills that have occurred from January 1978 to June 2000 identified no spill sites in the immediate vicinity of the subject property.
16. A review of the WDNR June, 1999 Update of the "Registry of Waste Disposal Sites in Wisconsin" determined that there are two inactive waste disposal sites located within one mile of the subject property (see the Site Location Map). These sites include 1) the City of Madison Demetral Field Landfill along the east side of Packers Avenue about 2200 feet south of the subject property, and 2) the adjacent City of Madison Truax Field Landfill. The Truax Field Landfill is also listed in the WDNR February 10, 1992 "Wisconsin Remedial Response Site Evaluation Report" which *presents a compilation of sites or facilities which cause, or have the potential to cause, some type of environmental pollution.* A review of the WDNR March, 1998 "List of Superfund Sites in Wisconsin" [i.e. Wisconsin Sites on the National Priority List (NPL)] determined that there are no such sites listed within a one mile radius of the subject property.

WDNR records concerning the City of Madison Demetral Field Landfill indicate that it was an active landfill from 1952 - 1967 and that ash, noncombustibles, trash, garbage and demolition and construction debris were disposed at the site. The site is used today as the Madison East High School's athletic field. Ground water monitoring conducted at the site has determined that there is *"a northerly flow of ground water in the sandstone at the Demetral Field site"*. A methane gas ventilation system has also been operating at the site since the early 1980's.

WDNR records concerning the City of Madison Truax Field Landfill indicate that it was an active landfill from 1948 - 1972 and that ash, noncombustibles and trash were disposed at the site. Ground water contamination has been detected at the site and the direction of ground water flow at the site has been determined to be to the northwest. A methane gas ventilation system has also been operating at the Truax Field Landfill since the early 1990's.

Because of its distance from the subject property, the former Demetral Field Landfill is not considered to be a reasonable environmental threat to the subject property. Because of its close proximity to the Truax Field Landfill, methane gas and/or contaminated ground water may have migrated to the subject property from the adjacent landfill. As discussed below, as part of an ongoing evaluation of the environmental impacts of the Truax Field Landfill, some limited data is available concerning the concentrations of methane gas and certain ground water contaminants at the subject property.

17. A review of an October 5, 2001 "WDNR Bureau for Remediation and Redevelopment Leaking Underground Storage Tank (LUST) Site Listing" did not identify any active LUST sites within about a quarter mile of the subject property. A review of an October 5, 2001 "WDNR Bureau for Remediation and Redevelopment Environmental Repair Program (ERP) Site Listing" identified only one active ERP site within about a quarter mile of the subject property. The one active ERP site is listed as the *"Madison 1948-72 Truax"* site which is the adjacent

Truax Field Landfill. The ERP listing indicates that the Truax Field Landfill was first listed as an ERP site in 1980. WDNR staff could not locate the ERP file for this site and surmised that it was possibly closed many years ago.

[Note: It was explained that when ground water contamination was discovered near the landfill many years ago, a new clay cap was placed over the landfill. Since then, the old landfill has been monitored under the WDNR solid waste regulations which consists of periodic sampling for methane gas from methane gas probes and periodic sampling and analysis of the ground water from ground water monitoring wells. The data is being submitted to Mark Harder, Waste Management Environmental Engineer at the WDNR South Central Region Office, Fitchburg, Wisconsin. A review of recent monitoring data submitted to the WDNR is discussed below at Number 19.]

18. A review of the MMSD's files concerning the former Burke Wastewater Treatment Plant at the subject property and past soil and ground water sampling and analysis conducted at the property determined the following (see Appendix H):
 - A. A March 16, 1937 letter to the MMSD which was apparently written by the Superintendent of Operation of the Burke Wastewater Treatment Plant summarizes the problems the plant had in treating wastewater from the Oscar Mayer meatpacking plant. The letter describes how in the mid-1930's Oscar Mayer constructed a wastewater treatment plant to pretreat their wastewater before it was discharged to the Burke Wastewater Treatment Plant. One interesting statement is that because inadequate capacity had been planned to handle the sludge from Oscar Mayer's plant, Oscar Mayer requested and ultimately received permission to use a sludge tank at the Burke Wastewater Treatment Plant. Before Oscar Mayer received permission to use the sludge plant at the Burke Wastewater Treatment Plant, the company "*discharged a great volume of sludge into the marsh areas surrounding the treatment works*".
 - B. A May 14, 1968 letter from Oscar Mayer to the MMSD requested permission to construct an additional sludge lagoon in the far southeast area of the subject property. The letter stated that the lagoon was to have an effective depth of six feet and be able to hold about 15,000 cubic yards of sludge.
 - C. In 1988, a contamination evaluation was performed at Truax Field. Four locations at Truax Field which had been identified as potential sources of soil, surface water and/or ground water contamination were evaluated. Two of the four areas included the former wastewater treatment plant at the subject property and the former Truax Field Landfill. The contamination evaluation consisted of a records review, site inspection, and sampling and analysis of soil, surface water and ground water. Ground water monitoring well TG-2 at the subject property was apparently installed by the Army Corps of Engineers as part of the 1988 contamination evaluation. With regards to the subject property, the contamination evaluation stated that

- *"A relatively shallow monitoring well (TG-2) installed downgradient of the former treatment plant had concentrations of chromium, lead, and cadmium in excess of MCLs [Maximum Contaminant Levels] and MCLGs [Maximum Contaminant Level Goals]."*
 - *"Monitoring wells downgradient of the landfill (TG-1, TG-5, TG-9, TG-10, and TG-11) contained a variety of metals, petroleum hydrocarbons, volatile organics, and chlorinated compounds."*
 - *"No contaminants were found in a surface water sample (TW-2) collected in one of the lagoons at the former treatment plant."*
 - *"A sample was obtained from the culvert which discharges water from the former wastewater treatment plant lagoons to a ditch connected to Starkweather Creek. This sample contained elevated levels of petroleum hydrocarbons (65 mg/l) and a trace of tetrachloroethylene [3.2 µg/l]."*
 - *"Three samples collected from sludge drying bed cells (TS-7, TS-8, and TS-9) were found to contain varying levels of organic chemicals and indicated that solvents may have been present in sludges disposed at the former Burke Wastewater Treatment Plant."*
 - The direction of ground water flow in the former Burke Wastewater Treatment Plant area is *"believed to be towards the west"*.
- D. Ground water monitoring wells MW-5, MW-5A and MW-5B in the far southwest area of the subject property (see Photo 17) were installed in June, 1990 by Dames & Moore which was then under contract to the City of Madison to evaluate the extent of ground water contamination from the Truax Field Landfill. An October 2, 1990 letter from the LaFollette Sinykin law firm to James Nemke of MMSD was attached to the first round of Dames & Moore's sampling results for their work near the Truax Field Landfill. An attorney with LaFollette Sinykin stated that, *"The results suggest detects and exceedances for arsenic, cadmium, and selenium concentrated at wells MW-5, MW-5A, MW-5B, and MS-6 located in the vicinity of the former sludge lagoons"* and *"This information leads to the conclusion that hazardous substances are being released from the treatment plant facility"*. In an October 17, 1990 letter, James Nemke of MMSD stated that, *"The District feels strongly that any pollutants which might be confirmed in the Truax area are not a result of the District's operation of the Burke plant"*.
- E. Permission to install methane gas probe GP-17 (see Photo 2) at the subject property was apparently given by David Reynolds of Reyco Madison, Inc. in either late 1990 or early 1991 based on a December 14, 1990 letter from the City of Madison to Reyco Madison.
- F. In a December 14, 1990 letter from James Nemke of MMSD to David Trainor of Dames & Moore, Mr. Nemke responded to a statement in a December, 1990 draft report concerning the Truax Field Landfill. In the

draft report the statement was made that, *"Due to the concentrations of barium, cadmium, copper, and zinc, the potential exists for those metals to leach out into the ground water"*. Mr. Nemke stated that, *"While some of the concentrations you refer to are certainly above background levels for the metals in question, the concentrations themselves may not be of great concern relative to leaching into the ground water. Most scientific evidence regarding heavy metals in a soil matrix concludes that soil pH and organic matter are critical to determining whether there is a significant potential for leaching. It has generally been found that these metals are tightly held to the soils and the potential for leaching is minimal."*

[Note that Mr. Nemke's argument from 1990 concerning heavy metals that may be in the soil at the subject property may still be valid. That is, certain heavy metals could still be present in the soil at the subject property but the WDNR may not consider the presence of the heavy metals in the soil to be a significant concern because they may have either not leached into the ground water at the property or may be present in the ground water at such low levels that no remediation of either the soil or the ground water is determined to be necessary.]

- G. An August 28, 1991 revised draft consent order relating to the adjacent Truax Field Landfill indicates that 1) the landfill is an unengineered landfill without a liner or a leachate collection system to retain and remove leachate, 2) the landfill was an open burning dump in the 1930's, a landfill for the U.S. Army in the 1940's, and a landfill for the City of Madison from 1953 - 1972, and 3) samples from ground water monitoring wells near the Truax Field Landfill were to be collected and analyzed quarterly.
- H. A November 4, 1991 letter from Reyco Madison, Inc. to the WDNR described the company's plan to close the decant pond and Sludge Lagoon 7 which were both located in the southeast area of the subject property. The plan called for removing the layer of sludge (approximately 12 to 24 inches thick) from the site and stockpiling it on-site. After the decant pond and sludge lagoon were filled in with fill material, the sludge was to be spread over the filled in areas. An attached January 29, 1992 MMSD letter indicated that 1) a sludge sample had been collected from the decant pond and a sludge sample had been collected from the sludge lagoon, and 2) by late January 1992, no response had been received from the WDNR regarding the closure plan.
- I. A February 4, 1992 MMSD letter transmitted the laboratory results from the two sludge samples analyzed from the decant pond and Sludge Lagoon 7. Soil standards for non-industrial and industrial land use classifications were established by the WDNR in 1995 (see Appendix I). Table 2 in NR 720.11 is entitled *"Residual Contaminant Levels Based On Human Health Risk From Direct Contact Related To Land Use"* and lists allowable levels for certain heavy metals. Allowable levels at industrial sites are higher than at non-industrial sites. By comparing the laboratory results in the February 2, 1992 MMSD letter to the WDNR standards one can see that the allowable non-industrial level for lead is 50 mg/kg and the concentration of lead in the

sludge from the decant pond sludge was 64 mg/kg and the concentration of lead in the sludge from Sludge Lagoon 7 was 94.3 mg/kg.

- J. The WDNR conditionally approved the Reyco Madison, Inc. plan to close the decant pond and Sludge Lagoon 7 in a March 30, 1992 letter.
19. Methane gas monitoring data and ground water monitoring data for the adjacent Truax Field Landfill was reviewed at the WDNR South Central Region Office, Fitchburg, Wisconsin and the monitoring data was discussed with Mark Harder, Waste Management Environmental Engineer with the WDNR. A review of the data determined the following (see Appendix J):
- A. An August 9, 2000 RMT letter to the WDNR includes a figure showing the *"Proposed and Existing Monitoring Device Locations"* used to monitor the Truax Field Landfill. Curtis Madsen signed the letter as the RMT Project Manager. Note that the location of ground water monitoring well TG-2 should be further to the east (i.e. near the chain link fence enclosing the former wastewater treatment facilities).
- B. A November 22, 2000 RMT letter states that, *"Groundwater continues to flow to the northwest..."*. The letter also states that, *"In summary, water quality data collected by RMT during this period are interpreted to indicate that although the landfill has had an impact on ground water quality near the landfill, there are other sources in the vicinity which make it difficult to separate the impacts and pinpoint which impacts are attributed specifically to the landfill"*. Ground water monitoring wells MW-5, MW-5A and MW-5B, which are located in the southwest area of the subject property, are referred to as being sidegradient wells. This is because the direction of ground water flow at the landfill is apparently to the northwest.
- C. All of the ground water monitoring data shows that ground water samples are being analyzed for arsenic, cadmium, chloride, iron, lead, manganese and nitrogen. The WDNR Chapter NR 140 ground water quality standards include a Preventive Action Limit (PAL) and a more stringent Enforcement Standard (ES). A comparison of the Table 1 Public Health Ground Water Quality Standards in NR 140.01 (see Appendix K) to the ground water monitoring data from wells TG-2, MW-5, MW-5A and MW-5B at the subject property finds that the concentrations of arsenic and lead in the wells often exceeds either the applicable PAL or the ES.
- D. Volatile organic compounds (VOCs) were not detected in a September 28, 2000 sampling and analysis of wells TG-2, MW-5, MW-5A and MW-5B at the subject property.
- E. A review of the data from methane gas probes GP-17, which is at the subject property, and methane gas probes GP-16 and GP-15 a short distance to the north of the northeast and northwest areas of the subject property, showed that with one exception the percent of methane gas at each probe has usually been 0.0 percent and occasionally been either 0.1 or 0.2 percent. The one exception to this is that on August 25, 2000, the concentration of methane

gas at GP-16, which is north of the northeast area of the subject property, was measured at 14.7 percent.

- F. Mark Harder stated that operational problems with the methane gas extraction system at the adjacent Truax Field Landfill has usually accounted for detectable levels of methane gas in methane gas probes GP-15, GP-16 and GP-17. When the methane gas extraction system is operating properly, no methane gas is typically detected in these three methane gas probes.
20. The subject property and the status of the environmental monitoring of the inactive Truax Field Landfill were also briefly discussed with Curtis Madsen, P.E. and Senior Project Manager with RMT, Inc., Madison, Wisconsin. Mr. Madsen explained that since about 1996, RMT, Inc. has been under contract to Dane County, which owns the former Truax Field Landfill, to conduct the environmental monitoring activities at the landfill. He said that the former landfill is now ringed with methane gas extraction wells and that RMT, Inc. periodically samples the ground water monitoring wells and the methane gas probes in the vicinity of the landfill. Specific statements of interest made by Mr. Madsen included the following:
- A. The explosive range for methane gas is 5 - 15 percent. Any concentration of methane gas above 1.25 percent causes one to look closer at the situation in an attempt to determine why the level is so high. The high concentration of 14.7 percent methane which was measured at GP-16 to the north of the northeast area of the subject property on August 25, 2000 is thought to have been a result of problems with their sampling equipment.
- B. RMT, Inc., on behalf of Dane County, worked with the architects who designed The Rifken Group building at 1402 Pankratz Street to the north of the northwest area of the subject property (see Photo 12) to answer their questions about possible methane gas concerns at the building site. During construction of the building, piping was installed beneath the concrete slab so that, if necessary, a compressor could be connected to the piping to vent methane gas. Methane gas probe GP-30 is located in Pankratz Street while methane gas probe GP-15 is located along the east side of Pankratz Street. Methane gas probe GP-30 was installed in the latter half of 2001 to monitor the level of methane gas near The Rifken Group building. RMT, Inc. has measured some relatively high levels of methane gas at GP-30 and is trying to modify the operation of the methane gas extraction system around the Truax Field Landfill to reduce the lateral migration of methane gas. The highest level of methane gas measured at GP-30 was 5.4 percent on December 19, 2001 which is within the explosive range for methane. On December 31, 2001, the level of methane gas at GP-30 was 0.8 percent.
- C. The remediation of high levels of heavy metals in soils can obviously be accomplished by excavating the soils. However, for less cost, RMT, Inc. has also been able to fix the heavy metals in place with one of their patented materials such as Enviroblend. By fixing the heavy metals in place, one reduces the amount of heavy metals which leach into the ground water.

- D. Based on work done for Dane County at the adjacent landfill, the depth to the ground water at the subject property is probably about 10 - 15 feet. Therefore, any soil or ground water sampling could be cost-effectively conducted using a geoprobe.
21. A review of a June 28, 1993 USEPA listing of Resource Conservation and Recovery Act (RCRA) hazardous waste transporters and Treatment, Storage and Disposal (TSD) facilities in Wisconsin determined that there are no permitted hazardous waste TSD facilities located within one mile of the subject property.

CONCLUSIONS

From these research activities, it appears that the former Burke Wastewater Treatment Plant was constructed at the subject property in 1914 and was in operation at the property from 1914 - 1936 and from 1942 - June, 1978. The Burke Wastewater Treatment Plant received domestic sewage prior to 1950 when it was operated by the City of Madison, the United States of America and MMSD. From 1950 until June, 1978, Oscar Mayer leased the subject property from MMSD. During this time, the wastewater treatment plant was operated by Oscar Mayer to provide additional treatment for wastewater from the company's full-line meatpacking plant.

Before Oscar Mayer operated the wastewater treatment at the subject property, there was no discharge of effluent to the surface in the vicinity of the treatment plant and no storage of sludge in on-site sludge lagoons. From 1951 - 1976, Oscar Mayer constructed sludge lagoons in the northeast and southeast areas of the subject property and on land to the east of the property. MMSD sold the subject property to Reynolds Transfer and Storage Co., Inc. in September, 1981. The former wastewater treatment facilities were not used after June, 1978 and in the late 1980's and early 1990's, most of them were either broken up and buried at the subject property or just filled in and buried at the property. The two former sludge lagoons in the northeast area of the subject property were filled in with fill material in the late 1980's but the former sludge lagoon in the far southeast area of the property may not have been filled in with fill material.

Materials known to have been disposed at the subject property include 1) sludge in the former sludge lagoons in the northeast and southeast areas of the property, 2) ash in the northeast area of the property from Oscar Mayer's coal-fired boilers during the 1950's, 3) hog hair and toenails in the northeast area of the subject property from the slaughtering of hogs at Oscar Mayer from the early 1950's to 1978, and 4) pieces of concrete and bricks from the razing of the former wastewater treatment facilities. Fill material brought to the subject property in the 1980's and 1990's is believed to have been clean fill.

It appears that the only building at the subject property which was heated was the former sludge building which was located between the two sludge digestors at the property. Blueprints from 1942 indicate that the sludge building was initially heated by a coal-fired and a gas-fired boiler and Donald Dencker, an Oscar Mayer Environmental Engineer who was employed by Oscar Mayer from 1958 - 1991, reported that the sludge building was heated by only methane gas and natural gas by 1958.

The inactive Truax Field Landfill is located adjacent to the north side of the subject property. The landfill was an open burning dump in the 1930's and a landfill for the U.S. Army and the City of Madison from 1942 - 1972. Ground water contamination has been detected at the site and the direction of ground water flow at the site has been determined to be to the northwest. A methane gas ventilation system has also been operating at the Truax Field Landfill since the early 1990's.

A review of MMSD files for the subject property and a WDNR file of methane gas monitoring data and ground water monitoring data near the former Truax Field Landfill determined that limited soil and ground water sampling and analysis has been done at the subject property and only one methane gas probe is located at the property. The subject property appears to have first been evaluated in 1988 when a contamination evaluation of the adjacent Truax Field Landfill included 1) the installation of ground water monitoring well TG-2 along the west side of the former wastewater treatment plant facilities, 2) the collection of surface water samples in one of the former sludge lagoons at the property and from a culvert which discharged water from the former sludge lagoons to a ditch connected to Starkweather Creek, and 3) the collection of three samples of sludge from the sludge drying beds at the wastewater treatment plant. Three additional ground water monitoring wells (i.e. MW-5, MW-5A and MW-5B) were installed in the southwest area of the subject property in 1990 and the one methane gas probe (i.e. GP-17) was installed about 50 feet from the north property line in the central area of the subject property in either late 1990 or early 1991. Two additional sludge samples were collected from the southeast area of the subject property in early 1992.

The limited soil and ground water sampling and analysis which was done at the subject property in the late 1980's and early 1990's confirmed that certain soil and ground water contaminants were then present at the subject property and the ongoing collection and analysis of ground water samples from four ground water monitoring wells at the property confirms the presence of certain contaminants. Volatile organic compounds (VOCs) have not been detected in ground water samples collected from the four ground water monitoring wells at the subject property but concentrations of certain heavy metals (especially arsenic and lead) in the same ground water samples usually exceed the applicable WDNR ground water quality standards. One of the two surface water samples collected in 1988 at the subject property contained elevated levels of petroleum hydrocarbons and a trace of a VOC and the three sludge samples collected from the sludge drying beds at the property *"were found to contain varying levels of organic chemicals and indicated that solvents may have been present in sludges disposed at the former Burke Wastewater Treatment Plant"*. The two sludge samples collected in early 1992 from the southeast area of the subject property also contained 64 mg/kg and 94.3 mg/kg of lead which exceed the WDNR's soil standard for lead of 50 mg/kg for non-industrial land use classifications.

The methane gas monitoring data shows that there is usually no detectable methane gas in the one methane gas probe at the subject property and two additional methane gas probes near the northeast and northwest areas of the subject property. However, based on discussions with staff of the WDNR and RMT, Inc. (the company conducting the environmental monitoring of the Truax Field Landfill), the low levels of methane gas in the three methane gas probes is maintained only if the methane gas extraction system surrounding the Truax Field Landfill is operating properly. A fourth methane gas probe was installed in Pankratz Street to the east of a building at 1402 Pankratz Street which is north of the northwest corner of the subject property. The fourth methane gas probe is used

to monitor the level of methane gas near the building and on December 19, 2001, the level of methane gas was measured at 5.4 percent which is within the explosive range for methane. While RMT, Inc. is working to modify the methane gas extraction system which surrounds the Truax Field Landfill to reduce the lateral migration of methane, the migration of methane through the soil at the north end of the subject property is clearly a concern that must be considered in any future plans for the property.

In summary, with few exceptions the soil, ground water and methane gas data for the subject property is limited to that which has been collected primarily to evaluate the environmental impact of the adjacent Truax Field Landfill. The limited data shows that at least low levels of certain soil and ground water contaminants are present at the property and that methane gas sometimes migrates from the adjacent Truax Field Landfill into the north end of the subject property.

No other significant environmental concerns were identified during the site visit to the subject property and there have reportedly been no private water supply wells and no underground or aboveground storage tanks at the subject property. Lastly, with the exception of the adjacent Truax Field Landfill, a review of the WDNR's lists of LUST and ERP sites determined that there are no active LUST or ERP sites within about a quarter mile of the subject property. Based on these findings, **it is my professional opinion that "recognized environmental conditions" exist at the subject property and therefore, additional investigation into the property's environmental status is warranted.**

RECOMMENDATIONS

Based on the above findings and conclusions, the following actions are recommended:

1. Soil and ground water samples should be collected at the subject property using a geoprobe. The samples should be analyzed for VOCs, heavy metals and polychlorinated biphenyls (PCBs).
2. Additional methane gas probes should be installed at the north end of the subject property to measure in-ground methane concentrations at the property.
3. The boat and the small containers of waste oil inside the boat that were left by someone at the subject property should be removed from the property and properly disposed.
4. A copy of this Phase 1 ESA report should be loaned to each environmental engineering firm from which a proposal is solicited to do the above sampling and analysis at the subject property so that they may have a better understanding of the past use of the property. This will allow them to more confidently determine where samples should be collected at the property.

Two environmental engineering firms that could be contacted to accomplish Recommendations 1 and 2 include 1) Resource Engineering Associates, Middleton,

David H. Reynolds
January 10, 2002
Page 31

Wisconsin (Robert Pofahl at 608-831-6563), and 2) RMT, Inc., Madison, Wisconsin (Curtis Madsen at 608-831-4444).

Please call me if you have any questions concerning this report.

Sincerely,

MIDWEST ENVIRONICS, INC.

Dennis E. Strutz
Dennis E. Strutz, REA
Senior Environmental Specialist
Registered Environmental Assessor (CA)
Certified Asbestos Inspector (WI)



Appendix A

Parcel Map



C1

PACKERS AV

PACKERS AV

PACKERS AV

PACKERS AV

PACKERS AV

00

97-2

21

02-7

SHOPKO I

22

02-5

ABERG AV

ROTH ST

01

21-9

67	68
2200	2200

69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00		
2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200

MYRTLE ST

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200

COOLIDGE ST

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200

07

MYRTLE ST

DIANE ST

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200

08

09

Appendix B

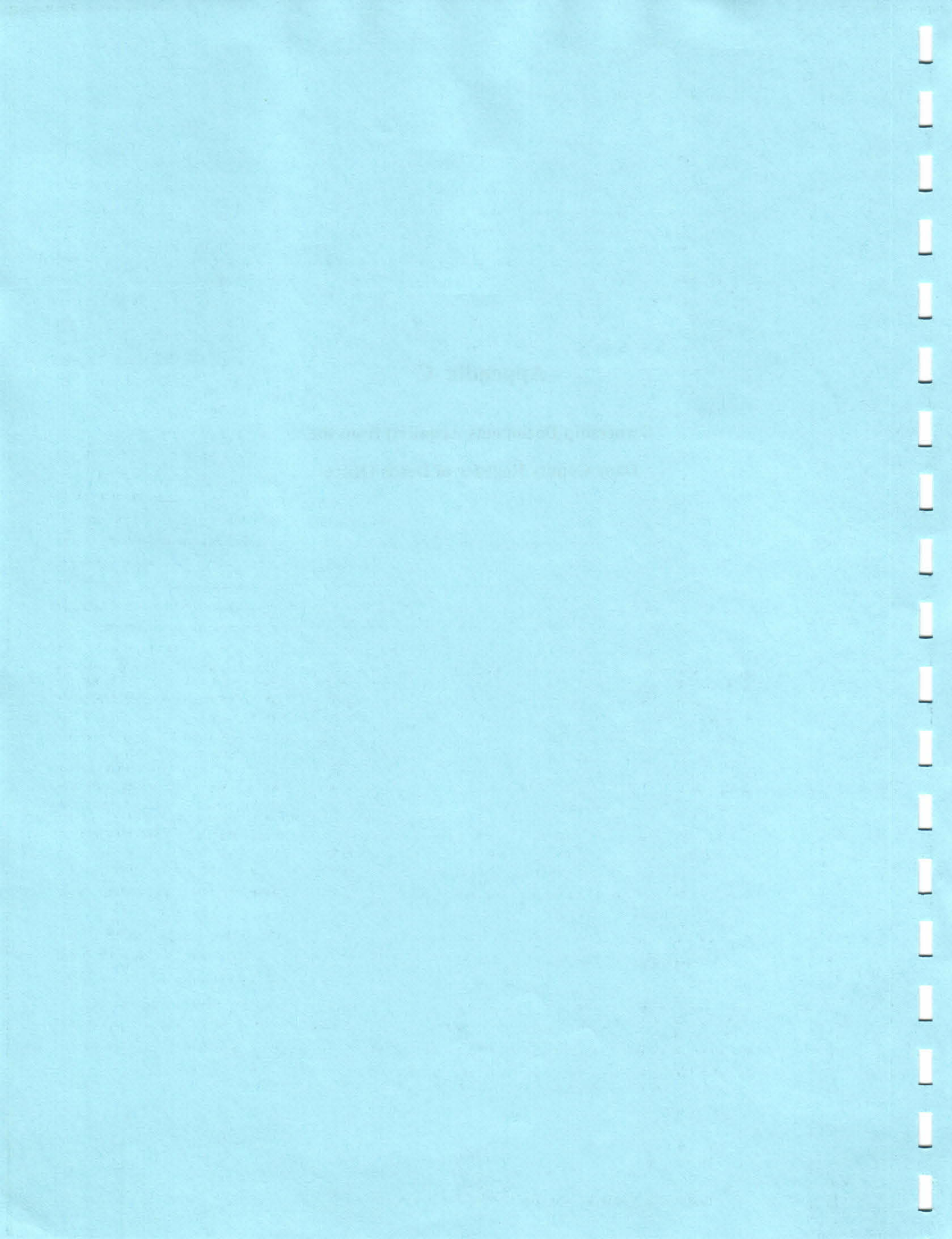
Definition of *"Recognized Environmental Conditions"*

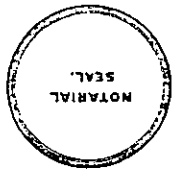
Definition of *Recognized Environmental Conditions* from the American Society for Testing and Materials (ASTM) Standard Practice for the Phase 1 ESA Process (i.e. ASTM Standard E 1527):

"The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

Appendix C

**Ownership Documents Acquired from the
Dane County Register of Deeds Office**





My commission expires 1911 at 13 25

Notary Public, Dane County, Wisconsin

In my presence, who executed the foregoing instrument and acknowledged the same to me known to be the person, who executed the foregoing instrument and acknowledged the same.

the above named *Marjorie* County of Dane, Wisconsin.

Personally came before me this *20th* day of *August* A. D. 1910.

[SEAL]

[SEAL]

[SEAL]

[SEAL]

SIGNED, SEALED AND DELIVERED IN PRESENCE OF

In Witness Whereof, The said party of the first part has hereunto set their hand and seal the day and year first above written.

or any part thereof.

possession of the said party of the second part *Marjorie* and assigns, against all and every person or persons lawfully claiming the whole

inheritance in the law, in fee simple, and that the same are clear and free from all incumbrances whatever.

of these presents.

grant, bargain and agree to and with the said party of the second part *Marjorie* and assigns, that at the time of the executing and delivery

covenant, for *Marjorie* heirs, executors and administrators, do

And the said *Clementine Affleck* and *Marjorie* and assigns, forever

and appurtenances, into the said party of the second part and to *Marjorie* heirs, executors and administrators, do

above bargained premises and their hereditaments and appurtenances, to have and to hold the said premises as above described, with the hereditaments

interest, claim or demand whatsoever, of the said party of the first part, either in law or equity, either in possession or expectancy of, in and to the

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title

together with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining; and all the estate, right, title



Whereas, On application in the ^{County} Court of Dane County, Wisconsin, to sell all the rights, title and interest of

Anton Affholder, Walter Affholder, Joseph Affholder, Clements Affholder and John Affholder,

infants of _____ _____ in and to the real estate hereinafter described, such proceedings were had that the undersigned was on the 21st day of June 1911, appointed the special guardian of said infant _____, in relation to the proceedings to be had upon such application, and gave and filed a duly approved bond to said infant _____, as required: and such proceedings were thereafter had in such County Court upon such application, that by order made on the 21st day of June 1911, by said Court A. C. Hoppmann _____ _____ said special guardian was authorized to execute, acknowledge and deliver to City of Madison,

a deed of conveyance of all the right, title and interest of said Anton Affholder, Walter Affholder, Joseph Affholder, Clements Affholder infants in and said real estate; _____ in my capacity of special guardian

Now Therefore, I, the said A. C. Hoppmann in my capacity of special guardian aforesaid, and in consideration of the premises and Five Hundred dollars to me in hand paid by the said City of Madison, do hereby grant and convey unto the said City of Madison all the right, title and interest of the said

Anton Affholder, Walter Affholder, Joseph Affholder, Clements Affholder and John Affholder

infants, in and to the following described real estate in Dane County, Wisconsin, to-wit:

The South Half of the South West quarter of the North East quarter (S 1/2 SW 1/4 NE 1/4) and the North Twenty acres of the West Half (W 1/2) of the South East quarter of Section Thirty-one Town Eight (8) North Range Ten (10) East being in the town of Burke Dane County Wisconsin,

Witness the hand and seal of the said A. C. Hoppmann special guardian as aforesaid, this 21st day of June 1911.

A. C. Hoppmann [SEAL] Special guardian of Anton Affholder, Walter Affholder, Joseph Affholder, Clements Affholder, John Affholder

IN PRESENCE OF
M. B. Ehrlich
Grace D. Meyers

Notarial seal

STATE OF WISCONSIN. } ss. Personally came before me this 21st day of June 1911,
Dane COUNTY of _____ the above named A. C. Hoppmann the execution being
special guardian of the above named infants, to me known to be the person who executed the foregoing instrument and acknowledged that he executed
the same by virtue of the authority aforesaid. Anton, Walter, Joseph, Clements and John Affholder, infants,
My commission Sept 21, 1914 M. B. Ehrlich
Recorded June 24th 1911 at 3 o'clock P. M. Notary Public Dane County Wis.



FILED
JUN 14 1933

VS. 381-211

THIS INSTRUMENT made this 14th day of June, 1933,
between the CITY OF MADISON, Dane County, Wisconsin, a municipal corporation, one of the cities of the State of Wisconsin, duly organized and existing under and by virtue of the laws of the state of Wisconsin, party of the first part, and the MADISON METROPOLITAN SEWERAGE DISTRICT of Madison, Wisconsin, a public corporation, duly organized and existing under and by virtue of the provisions of Section 66.10 of the Wisconsin Statutes, party of the second part;

W I T N E S S E T H : That said party of the first part for and in consideration of the sum of One Dollar (\$1.00) to it in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, and other valuable consideration, the said other valuable consideration being the value of the property herein and hereby conveyed, as the same shall be determined and fixed as provided by statute, by agreement between the parties hereto, and in case of failure of the parties so to agree, to be fixed by the Public Service Commission of Wisconsin, and to be credited to said party of the first part, has given, granted, bargained, sold, remised, released, and quit-claimed, and by these presents does give, grant, bargain, sell, remise, release, and quit-claim unto the said party of the second part, its successors and assigns forever, the following described real estate situated in the County of Dane and State of Wisconsin, to-wit:

(Burke Plant) The S $\frac{1}{2}$ of the SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 31-8-10, and the North 20 acres of the W $\frac{1}{2}$ SE $\frac{1}{4}$ Section 31-8-10.

(Nine Springs Plant) All that part of the SE $\frac{1}{4}$ Sec. 30-7-10 lying South of the right-of-way of the C.M.St.P. & P.R.R. Co. being 120 acres more or less.

All that part of the E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 30-7-10 lying South of the right-of-way of the C.M.St.P. & P.R.R. Co. being 62.28 acres.

That part of the SW $\frac{1}{4}$ Sec. 29-7-10 lying South of the right-of-way of the C.M.St.P. & P.R.R. Co. 105.68 acres.

That part of the W $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 29-7-10 lying South of the right-of-way of the C.M.St.P. & P.R.R. Co. 48.48 acres.

Land in Secs. 28 & 29-7-10 described as follows:

Beginning at an iron pin on the north line of the C.M.St.P. & P.R.R. Co. right-of-way 2331.2 ft. S. 86°-24' E. from the intersection of said north line of said R.R. right-of-way with the west line of Sec. 29 thence N. 53°-55' E. on a line parallel with and 100 feet northeasterly from the center line of the drainage ditch of the Nine Springs Drainage District 400 feet to the U.S. 2 line at a point on said line which is 255 feet north from the intersection of said

thence N 72°-25' E 1300 feet to an iron stake on the E & W line; thence S 63°-55' E 1204 feet to an iron stake; thence S 63°-55' E 1204 feet to an iron stake; thence N 63°-55' E 251 feet to an iron stake; thence S 74°-03' E 204 feet to an iron stake; thence S 65°-01' E 170 feet to the east line of Sec. 29 at a point which is north along said east line 407.4 feet from E 1/2 post; thence in Sec. 28-7-10 S. 65°-01' E 517 feet to an iron stake thence S 53°-37' E 606 feet to the E & W line; thence S 89°-43' W along said line 708.8 feet to the E 1/2 post of Sec. 29; thence in Sec. 29 S 89°-43' W along the E & W line 1361.6 feet to an iron stake on the E 1/8 line of sec. 29; thence south along said 1/8 line 984.7 feet to an iron stake in the north line of the R.R. right-of-way; thence N 86°-24' W 1647.7 feet to place of beginning. (41.37 acres in Sec. 29.)

(Pumping Station at First and East Johnson Streets).

Beginning at the intersection of the Southeasterly line of E. Johnson St. and the Southwesterly line of First St. thence Southeasterly along the SW line of First St. 117 feet; thence Southwesterly at right angles to First St. 90 feet; thence Southeasterly parallel to First St. 90 feet; thence Northeasterly at right angles to last mentioned line 90 feet to the SW line of First St.; thence Southeasterly along the SW line of First St. 125 feet to its intersection with the SE line of East Dayton St. projected; thence Southwesterly along the SE line of E. Dayton St. extended about 423 feet to the Northeasterly line of the C. & NW R R right-of-way; thence Northwesterly along said right of way about 145 feet to the Easterly line of the C.M. St. P. & Pac. R.R. Co. right-of-way; thence Northerly along last mentioned right-of-way about 356 feet to the Southeasterly line of E. Johnson Street; thence Northeasterly along Johnson St. 75 feet to point of beginning.

(Green Bush Pumping Station).

Green Bush Pumping Station property Brittingham Park.

(Wingra Pumping Station).

Beginning on Knickerbocker Street 180.6 feet southeast of Monroe Street, thence Northeast 70 feet thence southeast 40 feet thence southwest 70 feet to Knickerbocker Street and northwest to beginning being part of Block 12 Wingra Addition to the city of Madison.

(South Madison Pumping Station).

Commencing at the West quarter corner of Section 25-7-9, thence North along the West line of said Section 25, 475.6 feet to the South line of Van Dusen Street; thence East along the South line of Van Dusen Street and the South line of Van Dusen Street extended 733 feet more or less to a point on said South line of Van Dusen Street extended which point is 66 feet from and at right angles to the Southwest line of the right-of-way of the Chicago, Milwaukee, St. Paul and Pacific Railroad Company, and which point is on the Southwest line of old State Trunk Highway #12, and is the point of beginning; thence West along the South line of Van Dusen Street extended 100 feet; thence South at right angles to the South line of Van Dusen Street extended 165.9 feet more or less to the center line of Murphy's Creek; thence Northeasterly along the center line of Murphy's Creek 192 feet more or less to the Southwest line of old State Trunk Highway #12, which line is 66 feet from and parallel to the Southwest line of the right-of-way of the Chicago, Milwaukee, St. Paul and Pacific Railroad Company; thence Northwesterly along said Southwest line of old State Trunk Highway #12 157 feet more or less to the point of beginning.

(Force Main from Pumping Station at First and E. Johnson Streets to Burke Disposal Plant).

The force main which extends from the Pumping Station at First and E. Johnson Streets to and along East Johnson Street to Pennsylvania Avenue, thence along Pennsylvania Avenue to Commercial Avenue thence along Commercial Avenue to Peckers Avenue and thence along Peckers Avenue to the Burke Disposal Plant.

(Force Main from Pumping Station
at First and E. Johnson Streets to
Green Bush Pumping Station).

VAL 230 22210

The force main which extends from the Pumping Station at First and East Johnson Streets southerly across the city property, the Chicago & Northwestern Railway Company right-of-way for $\frac{1}{2}$ track, the playground and the Yehuda Parkway to East Washington Avenue; thence along East Washington Avenue to Blair Street; thence along Blair Street to East Wilson Street; thence along East Wilson Street to the Chicago, Milwaukee, St. Paul and Pacific Railroad Company grounds; thence southwesterly across said railroad grounds and along the Chicago, Milwaukee, St. Paul and Pacific Railroad Company right of way to near Henry Street; thence across Park grounds to the Green Bush Pumping Station.

-3-

(Force Main from Green Bush Pumping
Station to Nine Springs Disposal
Plant.)

The force main which extends southwesterly across park grounds to Brittingham Boulevard, thence along Brittingham Boulevard and South Shore Drive to Lowell Street, thence along Lowell Street to Olin Avenue, thence along Olin Avenue to the right of way of the Chicago & Northwestern Railway Company, thence northeasterly to Van Dusen Street, thence along Van Dusen Street and Van Dusen Street extended to Old State Trunk Highway #12, thence along old Highway 12 and right of way belonging to the city of Madison parallel to Chicago, Milwaukee, St. Paul & Pacific Railroad to the Nine Springs Disposal Plant.

The above right of way belonging to the city of Madison consists of the following described property and is also hereby transferred:

Part of the SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 30-7-10 being a strip of land 66 feet in width lying adjacent to and parallel with the SW line of the right of way of the C.M.St.P.& P.R.R. Co. and extending across said SW $\frac{1}{4}$ NW $\frac{1}{4}$ containing 1.91 acres of land being 1329 feet along said R.R. right of way and 1191.4 feet along the SW boundary of said strip excepting therefrom right of way or privilege of ingress and egress to and from that portion of said SW $\frac{1}{4}$ NW $\frac{1}{4}$ lying southwest of said strip of land and being described as follows:- commencing at a point on the southwest line of the right of way of said R.R. Co. 221 feet southeasterly from the north corner of above described tract, thence S 85.6 feet to southwesterly boundary of said tract thence southeasterly along southwesterly boundary 15 feet thence north 85.6 feet to R.R. right-of-way, thence northwesterly along said right-of-way 15 feet to place of beginning-

Part of the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 30-7-10 described as follows:

A strip of land 66 feet in width lying southwest of adjacent to and parallel with C.M.St.P.&P.R.R. Co. right-of-way and extending across said NW $\frac{1}{4}$ SW $\frac{1}{4}$ containing .66 acres.

Part of the NE $\frac{1}{4}$ Sec. 36-7-9 66 feet in width adjacent to and parallel with the southwest line of the right-of-way of the C.M.St.P.&P. R.R. Co. and extending from highway to east line of said section 439.54 feet along the right-of-way and 561 feet along the southwesterly boundary of said tract.

(Intercepting Sewers).

1 - The Northeast Intercepting Sewer which extends northeasterly on East Johnson Street from the pumping station at First and E. Johnson Streets to Fourth Street; northwesterly on Fourth Street to Upham Street; northeasterly on Upham Street to Fifth Street; northwesterly on Fifth Street to Hoard Street; northeasterly on Hoard Street to Seventh Street; southeasterly on Seventh Street to Upham Street; northeasterly on Upham Street to North Street; south on North Street to East Johnson Street; east on

122 5007
The North End Intercepting Sewer which extends from East Washington Avenue to Packers Avenue; southeast on East Pennsylvania Avenue to Packers Avenue; southeast and north on Milwaukee Street to East Johnson Street; east on East Johnson Street to Clyde A. Gallagher Avenue; southeast on Clyde A. Gallagher Avenue to Milwaukee Street.

2 - The North End Intercepting Sewer which extends from the Northeast Intercepting Sewer at East Johnson Street and Pennsylvania Avenue northerly on Pennsylvania Avenue to Commercial Avenue and westerly on Commercial Avenue to Sherman Avenue and southerly on Sherman Avenue to Topiwi Road and a branch of this sewer which extends from Pennsylvania Avenue and Vine Street northeasterly on Vine Street to Commercial Avenue; westerly on Commercial Avenue to Packers Avenue and north on Packers Avenue to the Junction with the Dane County Sanatorium Sewer at the city limits.

3 - The East Monona Intercepting Sewer which extends south from the Pumping Station at First and East Johnson Streets to the Yahara River at East Washington Avenue; southeast along the Yahara River to Rutledge Street; northeast on Rutledge Street to Walton Place; southeast on Walton Place to Yahara Place; northeast on Yahara Place to Schurz Avenue; southerly on Schurz Avenue to the shore of Lake Monona; easterly along the shore of Lake Monona and across park property to Atwood Avenue; northwest on Atwood Avenue to Sugar Avenue; northeast on Sugar Avenue to the right-of-way of the Chicago & Northwestern Railway Company; northwest across city property along the right of way and along Emmet Street to Fair Oaks Avenue; and northeast on Fair Oaks Avenue to Milwaukee Street.

4 - The West End Intercepting Sewer which extends from the Greenbush Station north on South Murray Street to Regent Street; west on Regent Street to Randall Avenue; north on North Randall Avenue to University Avenue; west on University Avenue to the right-of-way of the Chicago Milwaukee, St. Paul & Pacific Railroad Company; westerly through the University of Wisconsin grounds and across the Railroad right-of-way to the projection of Forest Avenue; south to University Avenue; westerly on University Avenue to the city limits at Farley Avenue.

5 - The South End Intercepting Sewer which extends from the South Madison Pumping Station near the right-of-way of the Chicago Milwaukee St. Paul & Pacific Railroad Company and the city limits at Wingra Creek southwesterly along Wingra Creek to South Park Street with a branch south on Baird Street to Bram Street and east on Bram Street to Third Avenue.

6 - The Monona Bay Intercepting Sewer which extends southerly from the Greenbush Pumping Station across park property and along Brittingham Boulevard to Ridge-wood Avenue extended.

7 - The Southwest Intercepting Sewer which extends from Regent Street and Randall Avenue west on Regent Street to the right of way of the Illinois Central Railroad Company at Monroe Street; thence westerly along the railroad right of way to Prospect Avenue; thence north on Prospect Avenue to Commonwealth Avenue; thence westerly on Commonwealth Avenue to the railroad right-of-way at Fox Avenue; thence southerly along the railroad right-of-way to Monroe Street; thence southwesterly on Monroe

Street to Knickerbocker Street; thence southeasterly to the Wingra Pumping Station; thence back to Monroe Street and thence southwesterly on Monroe Street and Nakoma Road to Naheda Trail; thence southwesterly on Naheda Trail to Cherokee Drive; thence southwesterly on Cherokee Drive to Ottawa Place and a branch of this sewer on Manitou Way from Nakoma Road to Country Club Road.

(Out-fall Sewer).

The out-fall sewer extending Southwesterly from the Burke disposal plant to Packers Avenue, thence southerly on Packers Avenue to Commercial Avenue, thence westerly on Commercial Avenue to Pennsylvania Avenue, thence southerly on Pennsylvania Avenue to East Johnson Street, thence southwesterly on East Johnson Street to First Street, thence southeasterly on First Street to East Kiffin Street, thence southerly across the city property and across East Washington Avenue to park ground along the east side of the Yahara River; thence southeasterly along the Yahara River to the outlet of the sewer near the point of discharge of the Yahara River into Lake Monona.

and also the... of said plants, covers and parking stations.

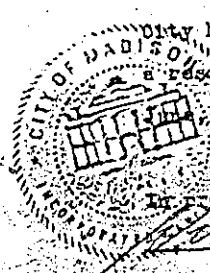
TOGETHER with all and singular the hereditaments and appurtenances thereunto belonging, or in any wise appertaining; and all the estate, right, title, interest, claim or demand whatsoever, of the said party of the first part, either in law or equity, either in possession or expectancy of, in and to the above bargained premises, and their hereditaments and appurtenances.

TO HAVE AND TO HOLD from June 15, 1933, the said premises as above described with the hereditaments and appurtenances, unto the said party of the second part, and to its successors and assigns FOREVER.

In the event of the dissolution of said Madison Metropolitan Sewerage District for any reason, the title to the premises and property herein conveyed shall revert back to and vest absolutely in the said grantor, the City of Madison, and its successors and assigns forever.

In the event that the use of any real estate hereby transferred for sewage disposal purposes shall at any time be discontinued or abandoned for a period of one year or more, it shall be the duty of the Madison Metropolitan Sewerage District to notify the clerk of the City of Madison and the City of Madison shall thereupon have an option for a period of six months from such notice to purchase any such real estate at the price credited to the City of Madison for the transfer of such parcel of land to the Madison Metropolitan Sewerage District. A schedule of the values so credited for the parcels of real estate transferred hereby, as determined in accordance with the resolution of the Common Council of the City of Madison authorizing such transfer and adopted June 9, 1933, is to be placed on file in the office of the City Clerk of the City of Madison and is by reference made a part hereof.

IN WITNESS WHEREOF, the City of Madison, party of the first part, has caused these presents to be signed by its Mayor, and countersigned by its City Clerk, and the corporate seal of the City hereto affixed, this 14th day of June, 1933, pursuant to a resolution of its Common Council duly adopted on the 9th day of June, 1933.



In presence of: Robert Parker

Countersigned: Herbert A. Lord

CITY OF MADISON

By James M. Jones
Mayor.

W. B. Davis
City Clerk.

Approved as to form
this 14th day of June, 1933
Vergil B. Reich
City Attorney

STATE OF WISCONSIN)
COUNTY OF DANE) SS

Personally came before me, this 14th day of June, 1933, James R. Law, known to me to be the Mayor of the above named City of Madison, and A. W. Bareis, known to me to be the City Clerk of the above named City, and to me known to be the persons who executed the foregoing instrument and acknowledged that they executed the same as such officers, as the deed of said City, and by the authority of its Common Council.

Fred P. Cummings
Notary Public, Dane County, Wis.
My Commission expires Jan. 13, 1934

RECORDED
JUN 20 1933
At 1:50 o'clock P.m.

THIS INDENTURE, Made this 29 day of July, A.D., 1942,
between MADISON METROPOLITAN SEWERAGE DISTRICT, a public corpora-
tion duly organized and existing under and by virtue of the laws
of the State of Wisconsin, located at Madison, Wisconsin, party of
the first part, and UNITED STATES OF AMERICA, party of the second
part.

WITNESSETH, That the said party of the first part, for
and in consideration of the sum of one dollar and other good and
valuable consideration to it paid by the said party of the second
part, the receipt whereof is hereby confessed and acknowledged,
has given, granted, bargained, sold, remised, released, aliened,
conveyed and confirmed, and by these presents does give, grant,
bargain, sell, remise, release, alien, convey and confirm unto the
said party of the second part, the following described real estate
situated in the County of Dane and State of Wisconsin, to-wit:

The South one-half (S $\frac{1}{2}$) of the Southwest quarter (SW $\frac{1}{4}$)
Northeast quarter (NE $\frac{1}{4}$) Section Thirty-one (31), Town
Eight (8) North, Range Ten (10) East, and the North
twenty (20) acres of the West half (W $\frac{1}{2}$) Southeast quar-
ter (SE $\frac{1}{4}$) Section Thirty-one (31), Town Eight (8) North,
Range Ten (10) East.

The party of the first part also grants to the party of the
second part the right to use, while the above described premises are
owned by the United States, the outfall sewer which extends from said
described premises to the Yahara River, being more particularly described
as follows:

The outfall sewer extending Southwesterly from the Burke
disposal plant to Packers Avenue; thence Southerly on
Packers Avenue to Commercial Avenue; thence Westerly on
Commercial Avenue to Pennsylvania Avenue; thence South-
erly on Pennsylvania Avenue to East Johnson Street;
thence Southwesterly on East Johnson Street to First
Street; thence Southeasterly on First Street to East
Mifflin Street; thence Southerly across the city pro-
perty and across East Washington Avenue to park ground
along the East side of the Yahara River; thence South-
east along the Yahara River to the outlet of the sewer
near the point of discharge of the Yahara River into Lake
Monona.

TOGETHER with all and singular the hereditaments and appurte-

186-202
VOL. 186-202
chances thereunto belonging or in any wise appertaining; and all the estate, right, title, interest, claim or demand whatsoever, of the said party of the first part, either in law or equity, either in possession or expectancy of, in and to the above bargained premises and their hereditaments and appurtenances.

TO HAVE AND TO HOLD the said premises above described with the hereditaments and appurtenances unto the said party of the second part, as long as United States of America shall use said described premises and appurtenances for the purpose of receiving, treating and disposing of sewage which will come to the sewage disposal plant upon said described premises from sources located within the area owned by the United States of America in and near the city of Madison, Wisconsin and used for the purposes of Technical Command Radio School, and this conveyance is made upon the express condition subsequent that if and when the United States of America shall permanently cease to use said described premises for receiving, treating and disposing of sewage as aforesaid, the title to said described premises, including said sewage disposal plant, will revert to and vest in the Madison Metropolitan Sewerage District, party of the first part.

AND THE SAID Madison Metropolitan Sewerage District, party of the first part, for itself and its successors, does covenant, grant, bargain and agree to and with the said party of the second part that at the time of the enrolling and delivery of these presents it is well seized of the premises above described, as of a good, sure, perfect, absolute and indefeasible estate of inheritance in the law, in fee simple, and that the same are free and clear from all incumbrances whatever, and that the above bargained premises in the quiet and peaceable possession of the said party of the second part, against all and every person or persons lawfully claiming the whole or any part thereof, it will forever WARRANT and DEFEND

IN WITNESS WHEREOF, the Commissioners of Madison Metropolitan Sewerage District, party of the first part, have caused these presents to be signed by John C. White, President, and countersigned by Frank C. Blied, Secretary, at Madison, Wisconsin, and the corporate seal of said Madison Metropolitan Sewerage District to be hereunto affixed this 29 day of July, A.D., 1942.

Signed and Sealed
in Presence of:

D. D. Dudley
A. M. Tester

MADISON METROPOLITAN SEWERAGE DISTRICT

By: John C. White
President

Countersigned:

Frank C. Blied
Secretary
Commissioners.



STATE OF WISCONSIN)
(ss.
COUNTY OF DANE)

Personally came before me this 29 day of July, A.D., 1942, John C. White, President, and Frank C. Blied, Secretary, of Commissioners of Madison Metropolitan Sewerage District, to me known to be the persons who executed the foregoing instrument, and to me known to be such President and Secretary of said Commissioners of said corporation, and acknowledged that they executed the foregoing instrument as such officers as the deed of said corporation, by its authority.

RECORDED
JUL 19 1943
At 8:45 o'clock 9 M

Samuel P. ...
Notary Public, Dane County, Wisconsin
My commission expires July 1943

THIS INDENTURE, Made this 2nd day of June, A. D., 1943, by and between the City of Madison, a municipal corporation of Dane County, Wisconsin, as party of the first part, and the UNITED STATES OF AMERICA, and its assigns, as party of the second part.

WITNESSETH, That for a valuable and sufficient consideration, the receipt whereof is hereby confessed and acknowledged, the said City of Madison, the party of the first part, hereby Quit Claims to the UNITED STATES OF AMERICA, and its assigns, the said party of the second part, all of its right, title and interest in and to the premises and property herein described during the time the UNITED STATES OF AMERICA shall own and use the same for the purpose of receiving, treating and disposing of sewage, which shall come to the sewage disposal plant upon said described premises from sources located within the area owned by the UNITED STATES OF AMERICA in and near the city of Madison, Wisconsin, and used for the purposes of Technical Command Radio School, and this conveyance is made upon the express condition subsequent that if and when the UNITED STATES OF AMERICA shall permanently cease to use said described premises for receiving, treating and disposing of sewage as aforesaid, the rights, title and interests hereby conveyed and released in the premises and property described shall revert to and vest in the said city of Madison, the party of the first part, namely:

The South one-half ($S\frac{1}{2}$) of the Southwest quarter ($SW\frac{1}{4}$) Northeast quarter ($NE\frac{1}{4}$) Section Thirty-one (31), Township Eight (8) North, Range Ten (10) East, and the North twenty (20) acres of the West half ($W\frac{1}{2}$) of the Southeast quarter ($SE\frac{1}{4}$), Section Thirty-one (31), Township Eight (8) North, Range Ten (10) East.

INCLUDING the right to use, while the above described premises are owned by the UNITED STATES, the outfall sewer which extends from said described premises to Yahara River, being more particularly described as follows:

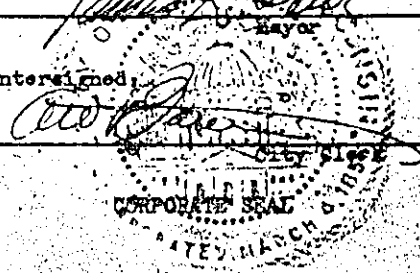
The outfall sewer extending Southwesterly from the Burke disposal plant to Packers Avenue; thence Southerly on Packers Avenue to Commercial Avenue; thence West-erly on Commercial Avenue to Pennsylvania Avenue; thence Southerly on Pennsylvania Avenue to East Johnson Street; thence Southwesterly on East Johnson

Street to First Street; thence Southeasterly on First to East Mifflin Street; thence Southerly across the city property and across East Washington Avenue to park ground along the East side of the Yahara River; thence Southeast along the Yahara River; to the outlet of the sewer near the point of discharge of the Yahara River into Lake Monona.

IT IS mutually understood and agreed, as the fact is, that the above described lands and premises were heretofore and on the 29th day of July, 1942, conveyed by the Madison Metropolitan Sewerage District, a public corporation organized and existing under and by virtue of the laws of the State of Wisconsin, located at Madison, Wisconsin, to the United States of America, and its assigns, in connection with the Madison Air Force Radio School Project designated and identified as tract No. 26 thereof, and this instrument shall serve to relinquish, release and convey to the United States of America, and its assigns, all of the rights, title and interest in and to said premises and property reserved to the said city of Madison, the grantor herein, by the terms and provisions of that certain Quit Claim Deed dated June 14, 1933, given by the said city of Madison, Dane County, Wisconsin, as grantor, to the said Madison Metropolitan Sewerage District of the said city of Madison, grantee, and recorded on June 20, 1933, in Volume 360 of Deeds at page 211 in the Register of Deeds Office for Dane County, Wisconsin, for and during the period of time herein limited and on the terms and conditions specified and referred to.

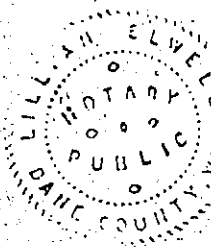
IN WITNESS WHEREOF, the said city of Madison, a municipal corporation of Dane County, Wisconsin, has caused this instrument of conveyance to be executed and delivered by James R. Law, its Mayor, and countersigned by A. W. Bareis, its City Clerk, and its corporate seal hereunto affixed this 2nd day of June, A.D., 1943, at the said city of Madison, Dane County, Wisconsin.

Signed and Sealed
in Presence of:
Florence Bergen
Florence Shore

CITY OF MADISON
By James R. Law Mayor
Countersigned: A. W. Bareis City Clerk


STATE OF WISCONSIN)
COUNTY OF DANE) SS

Personally came before me this 2nd day of June, A.D., 1943,
JAMES R. LAW, Mayor, and A. W. BARSIS, City Clerk,
of the city of Madison in Dane County, Wisconsin, to me known to be such
Mayor and City Clerk of the said city of Madison in Dane County, Wisconsin,
and to me known to be persons who executed the foregoing instrument and ack-
nowledged that they executed the same as such officers as the deed of said
municipal corporation in its behalf, and by its authority.



RECORDED
JUL 19 1943
845
At o'clock M

Lillian Ellwell
Notary Public, Dane County, Wisconsin

My commission expires Sept 9, 1945

STATE OF WISCONSIN)
) ss
 COUNTY OF DANE)

Herbert O. Lord, being first duly sworn, on oath deposes and says that he is Chief Engineer and Director of Madison Metropolitan Sewerage District, a public corporation organized and existing under and by virtue of the laws of the State of Wisconsin;

That on the 29th day of July, A.D. 1942, Madison Metropolitan Sewerage District made and delivered to the United States of America a deed of the following described real estate situated in the County of Dane, State of Wisconsin, to-wit:

The South one-half (S $\frac{1}{2}$) of the Southwest quarter (SW $\frac{1}{4}$) - Northeast quarter (NE $\frac{1}{4}$) Section Thirty-one (31), Town Eight (8) North, Range Ten (10) East, and the North twenty (20) acres of the West half (W $\frac{1}{2}$) Southeast quarter (SE $\frac{1}{4}$) Section Thirty-one (31), Town Eight (8) North, Range Ten (10) East.

That said deed was recorded in the office of the Register of Deeds for Dane County, Wisconsin, on July 19, 1943, in Volume 436 of Deeds, page 271, Document No. 674456.

That said deed contained the following:

"TO HAVE AND TO HOLD the said premises above described with the hereditaments and appurtenances unto the said party of the second part, as long as United States of America shall use said described premises and appurtenances for the purpose of receiving, treating and disposing of sewage which will come to the sewage disposal plant upon said described premises from sources located within the area owned by the United States of America in and near the city of Madison, Wisconsin, and used for the purposes of Technical Command Radio School, and this conveyance is made upon the express condition subsequent that if and when the United States of America shall permanently cease to use said described premises for receiving, treating and disposing of sewage as aforesaid, the title to said described premises, including said sewage disposal plant, will revert to and vest in the Madison Metropolitan Sewerage District, party of the first part.

That in the year 1946, and prior to the end of October, 1946, United States of America permanently ceased to use said described premises, being the premises hereinbefore described, for receiving, treating and disposing of sewage as aforesaid;

That on or about November 1, 1947, Madison Metropolitan Sewerage District made re-entry and took possession of and possessed

itself of the above described premises, and has since been and now is in possession of said described premises, and by virtue of the reverter clause in said deed hereinbefore mentioned, the title to said described premises reverted in the Madison Metropolitan Sewerage District, and is now vested in said District, which is in possession of said described premises and has been in possession of said described premises since on or about November 1, 1947.

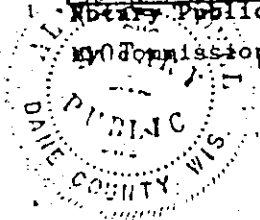
That this affidavit is made for the purpose of making a matter of record the foregoing transactions with respect to the re-entry and taking possession of the said described premises by Madison Metropolitan Sewerage District.

In the presence of:

William Ryan
William Ryan
A. M. Blater
A. M. Blater

Herbert O. Lord
Herbert O. Lord

Subscribed and sworn to before me
this 4th day of April, 1950

Alma V. Rydell (Alma V. Rydell)
Notary Public, Dage County, Wisconsin
My Commission expires August 3, 1952


RECORDED

APR - 4 1950

At 9:45 o'clock A. M

DOCUMENT NO.

1728822

VOL. 3316 PAGE 3

QUIT CLAIM DEED
STATE BAR OF WISCONSIN - FORM 3
THIS SPACE RESERVED FOR RECORDING DATA

31 DEC 31 AM 26

VOL. 3316 PAGE 3

Register of Deeds

Madison Metropolitan Sewerage District,
a metropolitan sewerage district organized
under the laws of the State of Wisconsin

quit-claims to Reynolds Transfer and Storage Co.,
Inc., a Wisconsin corporation

the following described real estate in _____ County,

State of Wisconsin:

A parcel of land located in the SW 1/4 of the NE 1/4 and
in the NW 1/4 of the SE 1/4 of Section 31, T8N, R10E,
City of Madison, Dane County, Wisconsin, to-wit: Commencing

at the East quarter corner of said Section 31; thence
N89°39'19"W, along the South line of the NE 1/4 of said
Section 31, 1314.35 feet to the point of beginning; thence S00°10'31"E, 662.57 feet;
thence N89°39'19"W, 579.60 feet to the Northeastly right-of-way of the "Packers Avenue-
Aberg Avenue" interchange, thence Northwesterly along a curve to the right, which is
also the said Northeastly right-of-way, which has a radius of 1896.86 feet and a chord
which bears N27°02'12"W, 1240.19 feet; thence continuing along said Northeastly right-
of-way N07°57'45"W, 235.43 feet; thence S89°30'12"E, 1175.89 feet; thence S00°09'55"W,
668.55 feet to the point of beginning. Containing 29.896 acres.

Said premises are subject to the following easements:

1. Landscaping easement recorded in Volume 818 of Records, Page 96, as Document 1522168, Dane County Register of Deeds Office.
2. A storm sewer easement recorded in Volume 152 of Records, Page 34, as Document No. 1256560, Dane County Register of Deeds Office.
3. Electric transmission line easement recorded in Volume 48 of Miscellaneous, page 374, Dane County Register of Deeds Office.
4. Water main easement recorded in Volume 427 of Records, at page 172, Dane County Register of Deeds Office.
5. Storm sewer easement recorded in Volume 427 of Miscellaneous, page 174, as Document No. 1131972, Dane County Register of Deeds Office.
6. A 60" storm sewer easement in favor of the City of Madison, said easement covers the existing storm sewer along the northerly portion of the premises.

RETURN TO 725 E. Mifflin St.
Madison, Wis. 53702

This is NOT homestead property
(is) (is not)

Dated this 15th day of September, 1981

FEE
#2
EXEMPT

MADISON METROPOLITAN SEWERAGE DISTRICT

(SEAL) By: J. W. Bill Clark (SEAL) President
(SEAL) Attest: Harold L. Lantz (SEAL) Secretary

AUTHENTICATION

Signatures authenticated this _____ day of _____, 1981

ACKNOWLEDGMENT

STATE OF WISCONSIN
Dane County

Personally came before me, this 15th day of September, the above named
J. W. Bill Clark and Harold L. Lantz

TITLE: MEMBER STATE BAR OF WISCONSIN

(If not authorized by § 706.06, Wis. Stats.)

THIS INSTRUMENT WAS DRAFTED BY

Timothy D. Fenner
Madison, Wisconsin

to me known to be the person _____ who executed the foregoing instrument and acknowledge the same.

Heidi Harton
Notary Public _____ County, Wis.
My Commission is permanent. (If not, state expiration date: _____ 1981)

(Signatures may be authenticated or acknowledged. Both are not necessary.)
The use of witnesses is optional.

DOCUMENT NO. 1728823

VOL. 3316 PAGE 4

STATE BAR OF WISCONSIN FORM 3
QUIT CLAIM DEED
THIS SPACE RESERVED FOR RECORDING DATE
RECORDED ON 12/31/27

31 DEC 31 AII : 27

VOL. 3316 PAGE 4

REGISTRY OF DEEDS

RETURN TO
1012 STATE ST.
MADISON 53704

Reynolds Transfer and Storage Co., Inc., a
Wisconsin Corporation
quit-claims to Edward S. Reynolds and David H. Reynolds
as tenants in common
the following described real estate in
State of Wisconsin:
A parcel of land located in the SW 1/4 of the NE 1/4 and in
the NW 1/4 of the SE 1/4 of Section 31, T8N, R10E, City of
Madison, Dane County, Wisconsin, to-wit: Commencing at
the East quarter corner of said Section 31; thence
N89°39'19"W, along the south line of the NE 1/4 of said
Section 31, 1314.35 feet to the point of beginning; thence S00°10'31"E, 662.57 feet;
thence N89°39'19"W, 579.60 feet to the northwesterly right-of-way of the "Packers Avenue-
Aberg Avenue" interchange, thence Northwesterly along a curve to the right, which is also
the said Northwesterly right-of-way, which has a radius of 1896.86 feet and a chord
which bears N27°02'12"W, 1240.19 feet; thence containing 1896.86 feet and a chord
of-way N07°57'45"W, 235.43 feet; thence S89°30'12"E, 1175.89 feet; thence S00°09'55"W,
668.55 feet to the point of beginning, containing 29,896.43 acres.
Said premises are subject to the following easements:
1. Landscaping easement recorded in Volume 818 of Records, Page 96, as Document
1522168, Dane County Register of Deeds Office.
2. A storm sewer easement recorded in Volume 152 of Records, Page 34, as Document No.
1256560, Dane County Register of Deeds Office.
3. Electric transmission line easement recorded in Volume 48 of Miscellaneous, page
374, Dane County Register of Deeds Office.
4. Water main easement recorded in Volume 427 of Records, at page 172, Dane County
Register of Deeds Office.
5. Storm sewer easement recorded in Volume 427 of Miscellaneous, page 174, as
Document No. 1131972, Dane County Register of Deeds Office.
6. A 60' storm sewer easement in favor of the City of Madison, said easement covers the
existing storm sewer along the northerly portion of the premises.
This is not a homestead property.
(19) (In not)
Dated this 30th day of December, 1981.

TRANSFER
\$459.00
FEE PAID

REYNOLDS TRANSFER AND STORAGE CO., INC.
BY: *Edward S. Reynolds* (SEAL)
President
Edward S. Reynolds
David H. Reynolds (SEAL)
Secretary

ACKNOWLEDGMENT
STATE OF WISCONSIN
Dane County
Personally came before me, this 30th day of
December, 1981, the above named
Edward S. Reynolds, President, and
David H. Reynolds, Secretary of Reynolds
Transfer and Storage Co., Inc.,
to me known to be the person
who executed the foregoing instrument and acknowledge the same on behalf
of the Corporation.

AUTHENTICATION
Signatures authenticated this _____ day of _____, 19____
TITLE: MEMBER STATE BAR OF WISCONSIN
authorized by § 706.06, Wis. Stat.
THIS INSTRUMENT WAS DRAFTED BY
ACCY. WILLIAM F. MUNDT

(Signatures may be authenticated or acknowledged. Both
are not necessary.)
The use of witnesses is optional.
Notary Public
My Commission is permanent. (If not, state expiration
date) _____
10, 19____

1850661

REGISTER'S OFFICE
DANE COUNTY, WIS. SS
RECORDED ON

SEP 10 11:16 AM '84

CAROL R. MAHNKE
REGISTER OF DEEDS

VOL 6077 PAGE 90

RETURN TO Thomas G. Ragatz
Foley & Lardner
P.O. Box 1497
Madison, WI 53701

EDWARD S. REYNOLDS and DAVID H. REYNOLDS,
as tenants in common

quit-claims to REYCO MADISON, INCORPORATED, a
Wisconsin corporation,

the following described real estate in Dane County,
State of Wisconsin:

A parcel of land located in the SW 1/4 of the NE 1/4 and in
the NW 1/4 of the SE 1/4 of Section 31, T8N, R10E, City of
Madison, Dane County, Wisconsin, to-wit: Commencing at the
East quarter corner of said Section 31; thence N89°39'19"W,
along the South line of the NE 1/4 of said Section 31,
1314.35 feet to the point of beginning; thence S00°10'31"E, 662.57 feet; thence
N89°39'19"W, 579.60 feet to the Northeastly right-of-way of the "Packers Avenue-Aberg
Avenue" interchange, thence Northwestly along a curve to the right, which is also
the said Northeastly right-of-way, which has a radius of 1896.86 feet and a chord
which bears N27°02'12"W, 1240.19 feet; thence continuing along said Northeastly right-
of-way N07°57'45"W, 235.43 feet; thence S89°30'12"E, 1175.89 feet; thence S00°09'55"W,
668.55 feet to the point of beginning. Containing 29.896 acres.

Tax Parcel No:

Said premises are subject to the following easements:

1. Landscaping easement recorded in Volume 818 of Records, Page 96, as Document 1522168, Dane County Register of Deeds Office.
2. A storm sewer easement recorded in Volume 152 of Records, Page 34, as Document No. 1256560, Dane County Register of Deeds Office.
3. Electric transmission line easement recorded in Volume 48 of Miscellaneous, page 374; Dane County Register of Deeds Office.
4. Water main easement recorded in Volume 427 of Records, at page 172; Dane County Register of Deeds Office.
5. Storm sewer easement recorded in Volume 427 of Miscellaneous, page 174, as Document No. 1131972, Dane County Register of Deeds Office.
6. A 60" storm sewer easement in favor of the City of Madison, said easement covers the existing storm sewer along the northerly portion of the premises.

This is not
(ix) (is not) homestead property.

Dated this 1st day of September, 1984.

FEE (SEAL)

EXEMPT (SEAL)

Edward S. Reynolds (SEAL)
Edward S. Reynolds
David H. Reynolds (SEAL)
David H. Reynolds

AUTHENTICATION

Signature(s) of Edward S. Reynolds and
David H. Reynolds

authenticated this 1st day of September, 1984

John S. Robison

TITLE: MEMBER STATE BAR OF WISCONSIN

(If not authorized by § 706.06, Wis. Stats.)

THIS INSTRUMENT WAS DRAFTED BY

Thomas G. Ragatz, Foley & Lardner, P. C.
Box 1497, Madison, WI 53701

(Signatures may be authenticated or acknowledged. Both are not necessary.)

ACKNOWLEDGMENT

STATE OF WISCONSIN

County, ss.
Personally came before me this day of
19 the above named

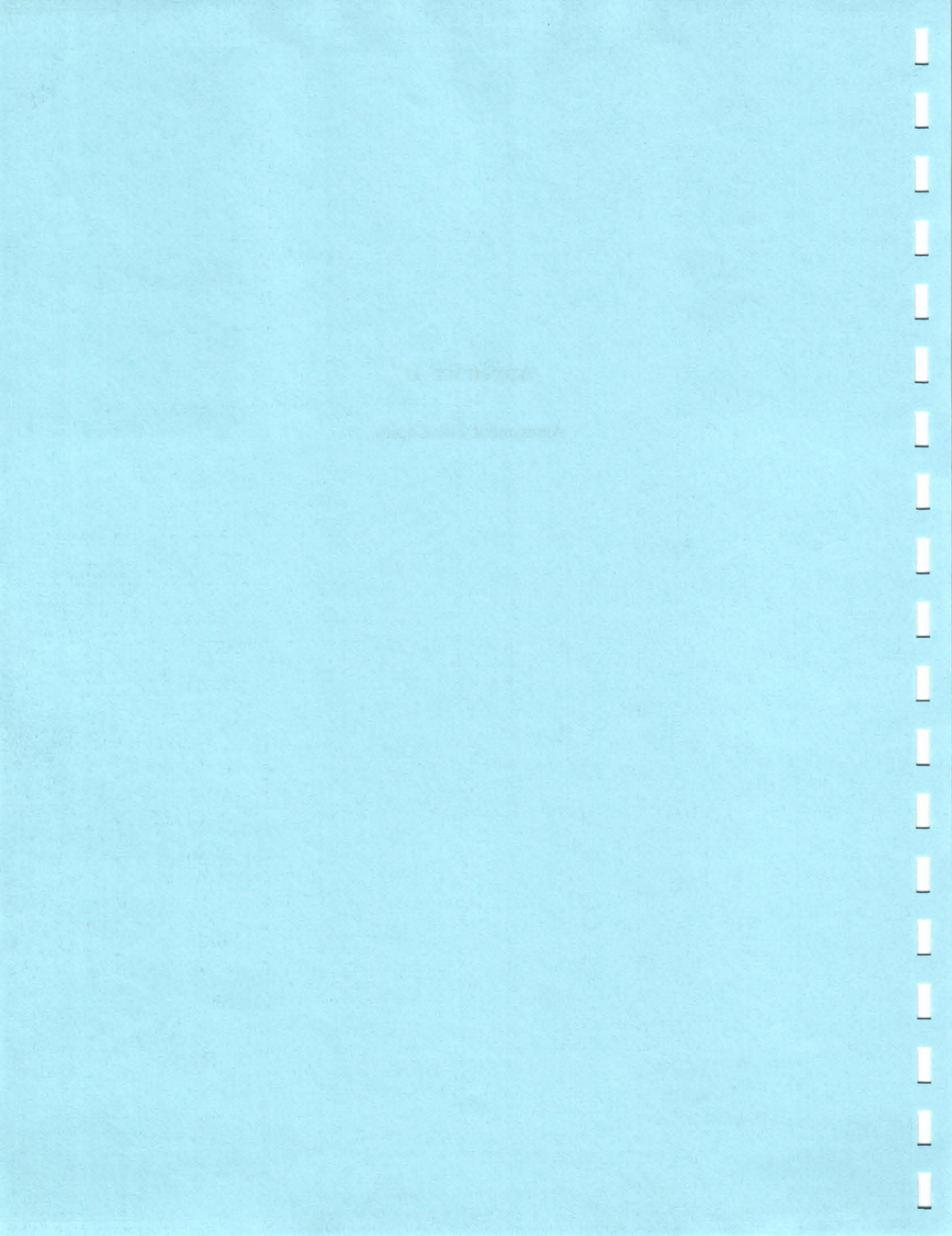
to me known to be the person who executed the foregoing instrument and acknowledge the same.

Notary Public County, Wis.
My Commission is permanent. (If not, state expiration date: 19)

400

Appendix D

Assessment File Copies



Address

Name

Date

Lot Blk.

No. Street

Owner *City of Madison*

Renter

DESCRIPTION OF LAND

Size Corner, Alley, (rear side, none)

Surface: level ft. above, below grade.

Improvements: Street Walk, Water, Sewer, Gas.

SALES Date Cons. Vacant or Impd.

OR Date Cons. Vacant or Impd.

APPRAISAL Date Cons. Vacant or Impd.

Owner's Estimate Land Bldgs. Total

Asking Price or Offers Mtg.

Information by Letter or Verbally? Other Information:

*West part of S.W. 1/4 of Sec. 31
Twp. 6 N. R. 10 W. of M. & C.
R.R. Co. a.k.a. The
Land of N. E. 1/4 and N. E. 1/4 of
S.W. 1/4 except part owned by
W. H. Mayes & Co. Br. 1/2*

Under this description on general list

Vacant Improved Value by
VOID 1938 See 1938 Station

	1924	1925	1926	1927	1928
Land					
Imp'mts					
Total					
Page					
	1929	1930 ✓	1931	1932 ✓	1933 ✓
Land					
Imp'mts					
Total					
Page	1934	1935 ✓	1936 ✓	1937 ✓	1938 ✓
			OVER		

1939	
L	
B	
T	

1007-1
Description: Addition *Sec 31 T8 R10E*

Lot Blk.
No. *110* Street *E. Main*
Owner *Madison Metropolitan Sewerage*
Renter *District*

DESCRIPTION OF LAND

Size Corner, Alley, (rear side, none)
Surface: level ft. above, below grade.
Improvements: Street Walk, Water, Sewer, Gas
SALES Date, Cons. Vacant or Impd.
OR Date, Cons. Vacant or Impd.
APPRAISAL Date, Cons. Vacant or Impd.
Owner's Estimate Land, Bldgs. Total
Asking Price or Offers Mtg.

Information by Letter or Verbally? Other Information:

Burke Sewerage Plant

Vacant: Improved: Value by

ASSESSMENT

	1924	1926	1928	1931	1933
Land	1942	1943			
Imp'mt	L				
Total	B				
Page	T	I			

	1929	1930	1931	1932	1933
Land	1939				1941
Imp'mts	L				L
Total	B				B
Page	T				T

OVER

1st Floor—Dining room, living room, kitchen, etc.

DETAILED DESCRIPTION

Porches: Front.....side.....rear.....sq. ft. unit.....enclosed
 Cubic contents: unit.....; Area.....sq. ft. unit.....depth.....height
 Wings and Additions: Stores; width.....depth.....height
 ft. unit.....
 Grade to roof: Cu. contents.....Unit.....; Area.....sq.
 Main Part: Stores; width.....depth.....height

DIMENSIONS.

Madison Metropolitan Sewerage District
 110 E Main Street

Burke Disposal Plant

Part of Sec. 31, R. T 8, R-10 E

S 1/2 of SW 1/4 of NE 1/4 and N 1/2
 of NW 1/4 of SE 1/4 of ~~part~~ of Sec.
 31, T. 8, R. 10 E.

Page	1934	1935	1936	1937	1938
			OVER		

639.156

Madison, Wis. Real Estate Blotter
Assessor's Office Parcel No. 1008-

Owner: MADISON METROPOLITAN

Address: SEWERAGE DISTRICT

Owner:
Address:

Owner:
Address:

Description: See land attached

Lot Blk
Addition: PART OF SEC 31T8 R10E

BURKE SEWERAGE PLANT

SALES	Date	Cons.
OR	Date	Cons.
APPRAISAL	Date	Cons.

ASSESSMENT

	1943	1944	1945	1946	1947
Land	✓				
Imp'mts	✓	✓	✓	✓	
Total	✓				
	1948	1949	1950	1951	1952
Land		✓			
Imp'mts	✓				
Total	✓				
	1953	1954	1955	1956	1957
Land					
Imp'mts					
Total					

LAND

TOPOGRAPHY: LEVEL LOW ROLLING RAILROAD FRONTAGE: YES NO FEET _____

LAND IMPROVEMENTS

- CURB & GUTTER _____ Linear Feet STREET
- SIDEWALK _____ Linear Feet CONCRETE
- MUNICIPAL SEWER BLACKTOP
- WELL GRAVEL
- MUNICIPAL WATER

LAND AREA COMPUTATION

70.324 PLATERS OR OTHER CONSIDERATION

Total Acres

29.89

Total Square Feet

Front Feet

PARCEL SUMMARY

- NUMBER OF BUILDINGS _____
- TOTAL WAREHOUSE AREA _____
- TOTAL BUILDING AREA _____
- TOTAL OFFICE AREA _____
- TOTAL RETAIL AREA _____
- TOTAL OTHER AREA _____
- NUMBER OF APARTMENTS _____
- EFFICIENCY _____ 2 BEDROOM _____
- STUDIO _____ 3 BEDROOM _____
- ROOMS _____ 4 BEDROOM _____
- 1 BEDROOM _____ OTHER _____

LAND VALUE CALCULATION

Area	Unit Value	Corner or Other Influence	Total Value
22269.7	.12		153000
1302269.7	.18	kind per plat	234,500
"	.30	"	390500
"	.50	"	650000

ORIGINAL COST: Building _____ Date _____

COMMENTS: 3/94: Owner has raised question about buildability of this parcel. Per Dave Benzschawel in City Eng., this parcel is buildable. There was a request in 1990 for access to the site to check for contamination from former landfill. No contamination was found. J.D.

4/19/95: Per Jim Voss, Assistant City Attorney the City has not taken the position that this lot cannot be built on. J.D.

8/15/95: Field Review for objection. J.D.

YEAR	1995	1996	1997	1998	1999
Change Codes	5				
Land Assessment	234,500				
Imp. Assessment	-				
TOTAL	234,500				

COMMERCIAL BUILDING DATABASE
PARCEL SUMMARY REPORT

Parcel No: Area No: Address:

08103140097-2 912 1401 Packers Ave

Initial Entry: 10/7/97
Initial Entry By: JAD
Parcel No: 081031400972

Note : Vacant land.

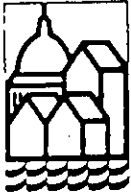
<p>Building No:</p> <p>Bldg Use:</p> <p>Yr. Built:</p> <p>Yr. Rem:</p> <p>Const. Quality:</p> <p>Ext. Cond:</p> <p>No. Stories:</p> <p>Ext Ht Story:</p>	<p>Frame:</p> <p>Wall Type:</p> <p>Wall Type2:</p> <p>Foundation:</p> <p>Roof Type:</p> <p>Roof Frame:</p> <p>Roof Deck:</p> <p>Roof Cover:</p> <p>Floor Frame:</p> <p>Floor Deck:</p> <p>Basement:</p>	<p>No. Units:</p> <p>No. Sl. Rooms:</p> <p>No. Eff:</p> <p>1 Bdrm:</p> <p>2 Bdrm:</p> <p>3 Bdrm:</p> <p>4 Bdrm:</p> <p>Other:</p>
---	---	---

<p>Above:</p> <p>5th Floor:</p> <p>4th Floor:</p> <p>3rd Floor:</p> <p>2nd Floor:</p> <p>1st Floor:</p> <p>Mezz Loft:</p> <p>Basement 1:</p> <p>Basement 2:</p> <p>Other Bsmnt:</p>	<p>Parking 1:</p> <p>Parking 2:</p> <p>Parking 3:</p> <p>Other Parking:</p> <p>Total:</p>	<p>Above:</p> <p>5th Floor:</p> <p>4th Floor:</p> <p>3rd Floor:</p> <p>2nd Floor:</p> <p>1st Floor:</p> <p>Mezz Loft:</p> <p>Basement 1:</p> <p>Basement 2:</p> <p>Other Bsmnt:</p> <p>Total:</p>
---	---	---

Area Type	Floor Area	Lighting	Heating	A/C	Fire Prot	Qual.	Floor Type	Wall Type	Wall Finish	Ceiling	# Elev	Int Cond	Bath		# Fire	
													F	H		
Total:													0			

Office of the City Attorney

City of
Madison



Henry A. Gempeler, City Attorney

City-County Building, Room 401
210 Martin Luther King, Jr. Eculevard
Madison, Wisconsin 53710
608 266 4511
FAX 608 266 5948

COPY

April 20, 1990

David H. Reynolds 249-1013

Reyco Madison, Inc.
P.O. Box 628
Madison, WI 53701-0628

Re: Parcel No. 0810-314-0097-2 - 1401 Packers Avenue

Dear Sir or Madam:

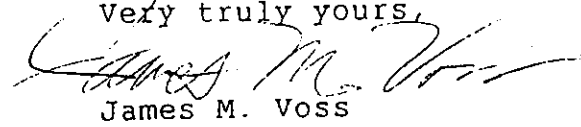
The above-mentioned parcel is a part of the former Burke Sewer Treatment Plant facility which is the partial subject of a proposed Department of Natural Resources Consent Order to investigate possible environmental contamination of the soils and groundwater at the site and at the adjacent former Truax Landfill. (A copy of the latest draft of the proposed Order and a map of proposed boring and monitoring locations is attached.)

The City of Madison and County of Dane require your cooperation in providing access for environmental monitoring on your property. The consulting engineering firm which has been retained to perform the work is Dames & Moore, represent by David Trainor, Senior Engineer. Additionally, it is requested that any grading, filling, earthwork or other site work be coordinated with the City Engineering Division, David Benzschawel, Principal Civil Engineer (266-4091) in order to avoid interference with the proposed monitoring plan and to prevent unnecessary duplication of work or removal of material.

If you have any further questions, please feel free to contact either Mr. Benzschawel or myself. We also invite you to join our technical steering committee consisting of representatives from the City, County, Oscar Mayer Foods, Madison Metropolitan Sewerage District and U.S. Army Corps of Engineers.

Thank you for your anticipated cooperation.

Very truly yours,


James M. Voss
Assistant City Attorney

JMV:bg
Attachment
cc: David Benzschawel
Atty. Linda Clifford

Proposed Consent Order No. SOD-89-18

(April 1990)

6. The area comprising the limits of filling at Truax Landfill constitutes 39.7 acres.
7. In 1973, land including and surrounding Truax Landfill was conveyed by the City of Madison to Dane County. The property upon which the Truax Landfill has been operated now is owned by Dane County.
8. The following information was provided to the Department by Dane County and the City of Madison: Adjacent to the Truax Landfill is an area formerly used as the Burke Sewage Treatment Plant. The City of Madison constructed the plant and operated it from 1914 to 1933. The Madison Metropolitan Sewerage District owned and operated the plant from 1933 to 1936 when the plant was inactivated. The United States of America condemned and took the site by warranty deed in 1942, using the plant to treat and dispose of sewage from Truax Field between 1942 and 1946. The plant reverted to the District in 1947 after a period of operation by the City. Oscar Mayer and Company began using the facility starting in 1950 and it entered into a lease dated September 7, 1951 for pretreatment of wastewater from its meat packing plant. A new agreement was executed for a term of 25 years commencing January 1, 1961. The company discontinued operation in 1978 and the lease terminated in 1979.
9. The following information was provided to the Department by Dane County and the City of Madison: The District sold the site and plant facilities in 1981 to Reynolds Transfer and Storage Company. The current owners of the property are *Shopsko Stores, Inc. and Ryco Madison, Inc.*
10. The following information was provided to the Department by Dane County and the City of Madison: Land disposal of sewage waste, including irrigation fields or sludge lagoons, occurred at the Burke Sewage Treatment Plant.
11. On March 31, 1982, a meeting was held with Department staff at which the City of Madison informed the Department that groundwater contamination had been detected in monitoring wells near the abandoned Truax Landfill.
12. In 1983, the City of Madison installed gas probes and began a gas migration study at the Truax Landfill.
13. In May, 1984, the City of Madison, Engineering Division, submitted a report to the Department titled "Truax Landfill Leachate Migration Study" which states, "...The City is monitoring Truax water quality...because...the rising levels of leachate indicator parameters being detected in the groundwater monitoring wells are a cause for concern." The report described leachate from the landfill and from sludge beds and irrigation fields at the sewage treatment plant. The report discussed the need for monitoring programs at the landfill and the sewage treatment plant sites.
14. On July 5, 1984, in response to the Leachate Study, the Department sent a letter to the City of Madison Engineering Division requesting additional information.

Proposed Consent Order No. SOD-89-18

(April 1990)

15. On August 1, 1984, the City responded to the Department's July 5, 1984 request by stating the City no longer owned the Truax Landfill site and did not have the resources to conduct additional studies. The City referred the Department's July 5, 1984 letter to Dane County, then owner of the property on which the Truax Landfill had been operated.
16. On September 25, 1984, the Department issued a joint letter to the City of Madison and Dane County advising them that both parties are responsible for proper monitoring of the Truax Landfill. Both the City and County were requested to supply the additional information requested in the Department's July 5, 1984 letter. The letter stated a joint order would be issued if the information was not provided.
17. In March, 1985, the City of Madison submitted a report titled, "An Information Report for Truax Landfill." This report described methane gas problems existing at the site.
18. Groundwater information submitted in the May 1984 Truax Landfill Leachate Migration Study indicates that channelization of flow from upper to lower aquifers in the Truax Landfill and Burke Sewage Treatment Plant area could be significant.
19. There are a number of high capacity water supply wells in the immediate vicinity of the Truax Landfill and Burke Sewage Treatment Plant.
20. On October 25, 1988, Department staff inspected the Truax Landfill and found various problem areas that include the following:
 - A. Settling of the landfill resulting in low areas where surface water collects and drains through the site cover.
 - B. A major settling crack along the entire western edge of the landfill where strong gas odors were evident.
 - C. Inadequately designed or nonexistent groundwater monitoring wells surrounding the landfill.
 - D. Potentially inadequate cover on the entire landfill and erosion gullies on the eastern side slopes.
21. The current monitoring program and available information are insufficient to properly evaluate the environmental effects of the Truax Landfill and the Burke Sewage Treatment Plant. The Order set forth below is needed to determine the extent of any potential hazard to public health, safety, welfare, or the environment and to assure compliance with chs. NR 500-520 and s. NR 140.20, Wis. Adm. Code.

Proposed Consent Order No. SOD-89-18

(April, 1990)

22. No approved system to efficiently collect and combust any hazardous air contaminants emitted by the Truax Landfill has been installed. There is insufficient information available to determine whether such a system is required to achieve the performance criteria of s. NR 504.04(4)(f), Wis. Adm. Code.

CONCLUSIONS OF LAW

The Department concludes that:

1. The Department has the authority to require the owner or operator of a landfill to submit an infield conditions report under s. 144.431(2)(b), Stats., and s. NR 508.20, Wis. Adm. Code.
2. The Department has the authority to require the submittal of a closure plan under s. NR 514.07, Wis. Adm. Code.
3. The Department has the authority to require that the closure plan address any or all of the information contained in chs. NR 504, 508, 512, 514, 516 and s. NR 506.08, Wis. Adm. Code, under s. NR 514.07, Wis. Adm. Code.
4. The Department has the authority to require the owner or operator to conduct monitoring at a nonapproved landfill under s. 144.44(4)(f), Stats., and ch. NR 508, Wis. Adm. Code.
5. The Department has the authority to require the owner or operator of a landfill to conduct sampling for background water quality and to specify indicator parameters for such sampling as described in s. NR 140.20, Wis. Adm. Code, under Ch. NR 508, Wis. Adm. Code.
6. Section NR 506.08(6), Wis. Adm. Code, requires the installation of a Department approved system to efficiently collect and combust hazardous air contaminants emitted by the facility within 18 months of February 1, 1988 at all landfills which have a design capacity of greater than 500,000 cubic yards and have accepted municipal solid waste, unless it is demonstrated that the performance criteria of s. NR 504.04(4)(f), Wis. Adm. Code, can be achieved without implementing such a system.
7. The Department has authority under ss. 144.431(2)(b), 144.44(4)(f), 144.44(8), and 227.44(5), Stats., to issue the following order.

ORDER

The Department, Dane County and the City of Madison agree to the following and the Department therefore orders that:

1. Dane County and the City of Madison shall, within seven months (7) of the effective date of this Order, submit a Phase I infield conditions report to the Department for review and approval. The Phase I report will be prepared in accordance with the requirements § ss. NR 508.20(1)-(5)(a) to (d),(f) and (6)-(10), Wis. Adm. Code.

Proposed Consent Order No. SOD-89-18

(April . 1990)

2. Dane County and the City of Madison shall, within seven months (7) of the effective date of this Order, submit within the Phase I infield conditions report the results and preliminary evaluation of at least one round of water quality sampling performed in all new wells installed, as well as selected existing wells. The samples shall be analyzed for the public health standards described in Table 1 of § ss. NR 140.10, Wis. Admin. Code, and the public welfare standards described in Table 2 and all appropriate indicator parameters contained in § s. NR 508.10(3)(c), Wis. Admin. Code, for the waste types present in the facility.
3. Dane County and the City of Madison shall, within seven months (7) of the effective date of this Order, submit within the Phase I infield conditions report the results and preliminary evaluation of at least one round of water quality sampling performed on private wells within 1,200 feet of the estimated limits of fill. The parameters will include those described in Item 2 of this Order.
4. Dane County and the City of Madison shall have all water quality samples, except field analyses of pH, specific conductance and temperature, analyzed by a laboratory certified or registered under ~~Wis. Stats. § s.~~ s. 144.95, Stats., and rules adopted under that section. The testing shall be done using a gas chromatograph/mass spectrophotometer in accordance with SW846 method 8240 or EPA wastewater method 624. As an alternative, the analysis may be performed using a gas chromatograph/photoionization detector/hall detector in accordance with SW846 methods 8010/8020 or EPA wastewater methods 601/602.
5. Dane County and the City of Madison shall evaluate appropriate upgradient groundwater quality at the facility using the data collected during the water quality sampling stipulated in Item 2 of this Order. Previously collected sampling data may be utilized in this provision provided that the data comply with § s. NR 140.16, Wis. Admin. Code requirements. Copies of selected existing groundwater monitoring data shall be submitted to the Department on forms supplied by the Department and in compliance with Item 9 of this Order.
6. That by June 30, 1990, Dane County and the City of Madison shall install monitoring wells at the following locations: [to be incorporated in Order upon mutual agreement with Department staff].
7. Dane County and the City of Madison shall implement a groundwater sampling plan and a methane gas sampling plan as described in Attachment A hereto, which is incorporated into this Order by reference.
8. Dane County and the City of Madison shall, within seven (7) months of the effective date of this Order, submit plans for any additional proposed groundwater monitoring well locations and additional proposed gas monitoring probes to complete data gaps identified as a result of the preliminary evaluation presented in the Phase I infield conditions report filed pursuant to this Order.

9. Dane County and the City of Madison shall submit three (3) copies of all required plans and data to the Department of Natural Resources, Bureau of Solid and Hazardous Waste Management - SW/3, P.O. Box 7921, Madison, WI 53707. The County and the City shall also submit one (1) copy to the Department of Natural Resources, Madison Area Solid Waste Investigator, 3070 Fish Hatchery Road, Fitchburg, WI 53713.
10. To the extent that work under this ~~Consent~~ Order is required on property that is presently owned by parties other than those bound by this ~~Consent~~ Order, Dane County and the City of Madison shall use their best efforts to obtain ~~site access agreements which provide reasonable access for both itself and the Department~~ from the present owners before the work on the site is scheduled to commence.
11. Dane County, the City of Madison and the Department expressly reserve all rights (including but not limited to any right of contribution possessed by Dane County and the City of Madison or against any other parties who may be responsible), claims, demands, and causes of action that they have or may have against all other persons and entities who are not parties to this ~~Consent~~ Order.
12. Nothing in this ~~o~~ Order shall be construed as an admission of liability on the part of Dane County or the City of Madison, for any purpose other than for action taken for failure to comply with the terms of this Order.
13. This ~~o~~ Order shall expire on December 31, 1990, if the provisions hereof have been complied with unless extended by mutual agreement of the parties. The Department reserves the right to issue a subsequent ~~o~~ Order or take other action allowed by law if conditions warrant in which Dane County and the City of Madison will have full right under the law to contest any subsequent such ~~o~~ Order or other action.
14. In the event Dane County or the City of Madison is unable to complete any of the above because of the happening of an event over which it had no control, including, but not limited to, an Act of the United States of America, the State of Wisconsin, or any government, or the unreasonable or unlawful delay or failure of any agency of the State of Wisconsin, or any other government agency to act with respect to any necessary approval or permit issuance, compliance with the schedules set forth above shall be extended by the amount of time of delay caused by such an event. In the event that Dane County and the City of Madison are unable to complete any of the above because of a happening of an event over which they had little control, the Department ~~shall not unreasonably refuse to modify~~ may approve a modification of this ~~o~~ Order to allow more time to achieve the specified activity.

Proposed Consent Order No. SOD-89-18

(April, 1990)

Dated at Madison, Wisconsin, this ____ day of _____, 1990.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

John L. LaFontaine
Director, Office of Enforcement

STIPULATION AND WAIVER

Dane County and the City of Madison hereby stipulate to the issuance of this Consent Order and waive further notice of their hearing rights, waive their statutory right to demand a hearing before the Department regarding this Consent Order and waive their right to challenge this Consent Order in Circuit Court under ~~Wis. Stats. §§ ss. 227.52 and 227.53, Stats.~~, or under any other provision of law. Dane County and the City of Madison further stipulate that this Consent Order is enforceable under ~~Wis. Stats. §§ ss. 144.98 and 144.99, Stats.~~, as soon as it is signed by the Department. The undersigned certify that they are authorized to sign this Consent Order and Stipulation and Waiver on behalf of Dane County and the City of Madison.

Dane County

Date

City of Madison

Date

APPROVED AS TO FORM:

Dane County Special
Environmental Counsel

Date

City of Madison
City Attorney

Date

0221 2 1 1990

[Note: Text strikeouts and underlines show revisions from Dane County and the City of Madison's March 30, version]

**BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES**

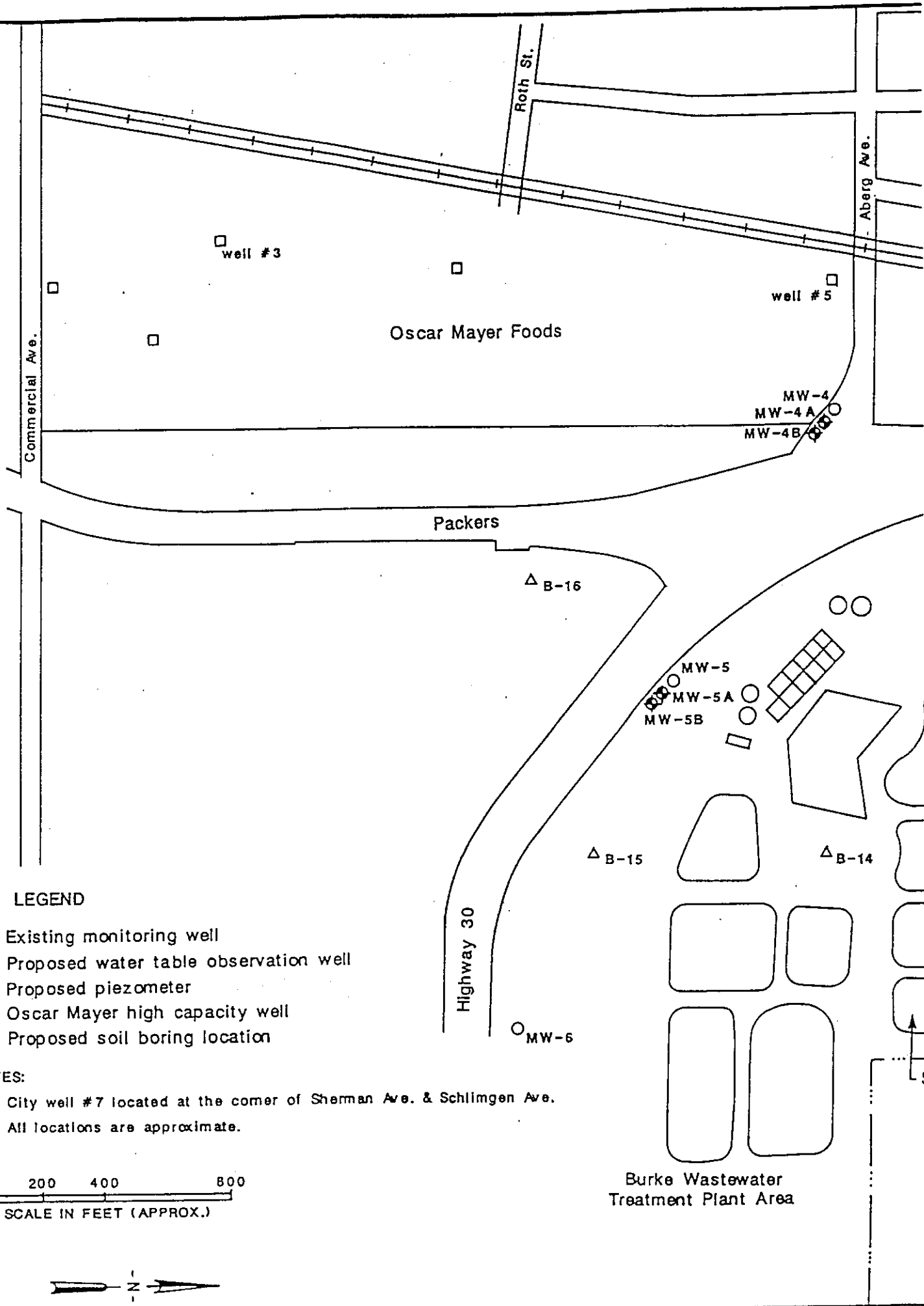
In the matter of an Infield Conditions)
Report, Closure Plan and Hazardous Air) Proposed Consent
Contaminant Control Plan for the Truax) (April, 1990)
Landfill, License No. 00306, Dane County,) Order No. SOD-89-18
Wisconsin.)

FINDINGS OF FACT, CONCLUSIONS OF LAW AND CONSENT ORDER

FINDINGS OF FACT

The Department finds that:

1. Truax Landfill, a municipal solid waste landfill, is located in the NE^{1/4} of Section 31, T8N, R10E, City of Madison, Dane County, Wisconsin.
2. The Truax Landfill was licensed by the Department of Natural Resources in 19__ under License No. 00306.
3. The following information was provided to the Department by Dane County and the City of Madison: The landfill originally was excavated by the United States Department of Defense (DOD) in the 1930's or 1940's. The DOD disposed of waste at the site and operated and controlled the site until conveying it to the City of Madison in 1948. After 1948, the City of Madison and/or Oscar Mayer and Company operated the site and conducted waste disposal and open burning there until approximately 1961 when the City began to operate the site as a sanitary landfill. In 1972, waste filling operations ceased at Truax Landfill and it was abandoned. Commercial, industrial, municipal, and military wastes were deposited at the site over the periods of operation by various public and private generators, haulers, and operators.
4. The Truax Landfill is a "nonapproved facility" as defined by s. 144.441(1)(c), Stats., and it did not have an approved plan of operation.
5. The Truax Landfill is a non-engineered site and was not built with a constructed clay liner, leachate collection system or any other engineering modification.

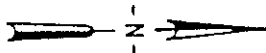


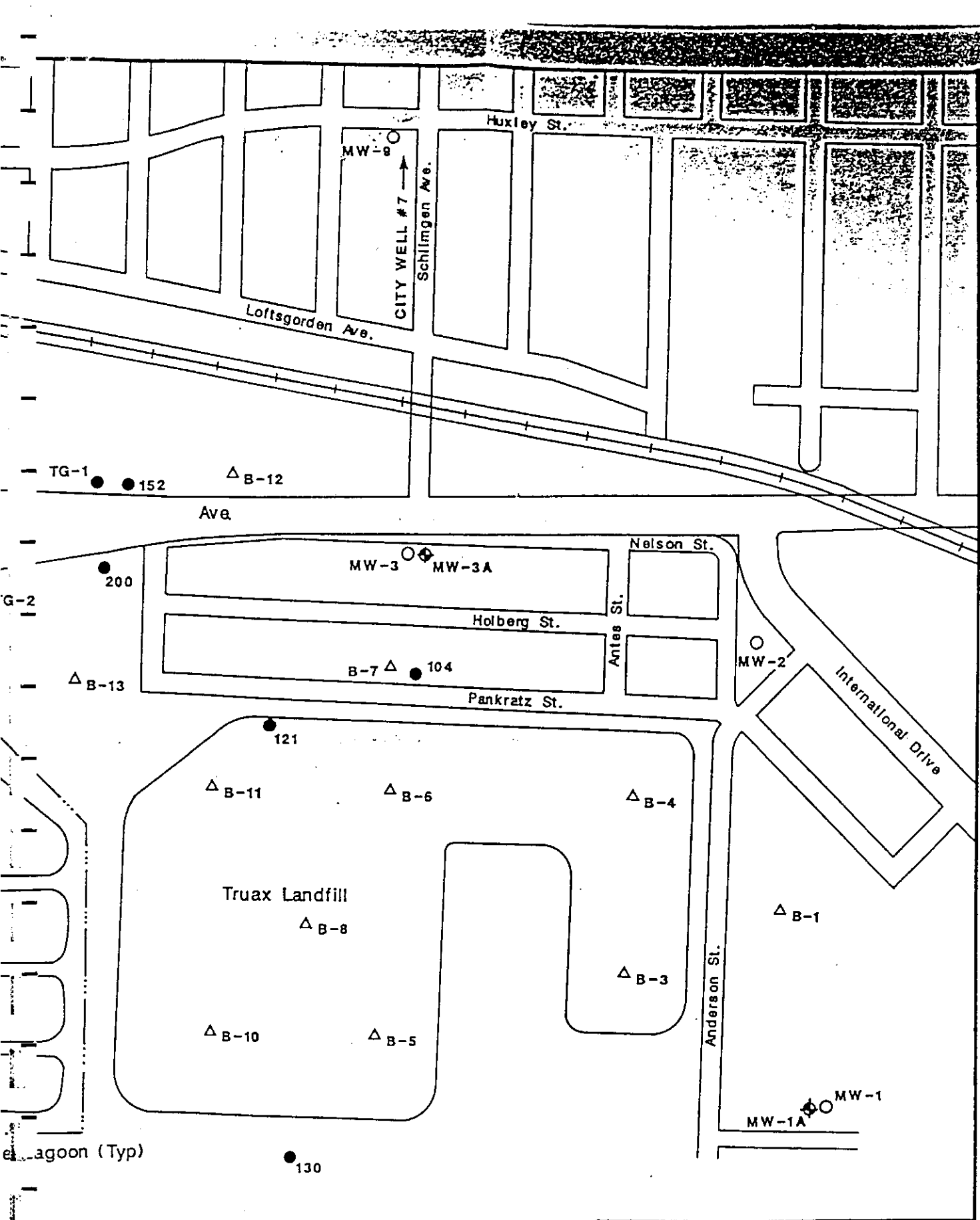
LEGEND

- Existing monitoring well
- Proposed water table observation well
- ◊ Proposed piezometer
- Oscar Mayer high capacity well
- △ Proposed soil boring location

NOTES:

City well #7 located at the corner of Sherman Ave. & Schillingen Ave.
 All locations are approximate.





CITY OF MADISON
TRUAX LANDFILL
 MADISON, WISCONSIN
FIGURE 2
SOIL BORING & MONITORING
WELL LOCATIONS
 APRIL 1990 DAMES & MOORE

97-2

00

02-7

ABERG

21-9

AVE.

03-7
02-9
01-1



City of Madison - Assessor's Office Property Information

General Information

Parcel Number: 081031400972
 Address: 1401 Packers Ave
 Owner: REYCO MADISON INC
 Mailing Address: PO BOX 628
 City, State, Zip: MADISON, WI 53701-0628
 Property Class: COMMERCIAL
 Property Use: M-1 VACANT
 Assessment Area: 912

Residential Bldg Info

Home Style:
 No. of Dwelling Units: 0
 Number of Stories: 0
 Year Built: 0
 Number of bedrooms: 0
 Number of full baths: 0
 Number of half baths: 0
 Total Living Area: 0
 First Floor Area: 0
 Second Floor Area: 0
 Third Floor Area: 0
 Above Third Floor: 0
 Finished Attic Area: 0
 Basement: 0
 Fin. Basement Area: 0
 Exterior Wall:
 Fireplace: 0
 Central Air:
 Garage 1:
 Number of Stalls: 0

Assessment Info

	2001	2000
Land	\$ 650,000	\$ 390,500
Improvements:	\$ 0	\$ 0
Total:	\$ 650,000	\$ 390,500

2000 Tax Information

Net Taxes: \$9,880.90
 Special Assmnt: \$0.00
 Other: \$396.00
 Total: \$10,276.90

Parcel Information

Lot Size: 1,274,945 FT
 Zoning: M1
 Frontage: 1,152 FT - Packers Ave
 Water Frontage: None
 TIF District: None
 School District: Madison
 Elementary: Hawthorne
 Middle: Sherman
 High School: East
 Alderperson: Santiago Rosas

Sales Information

Legal Description

2000 Tax Information

Special Assessment

Screen Produced: 10/17/01 12:50



City of Madison - Assessor's Office

Sales Information

Parcel Number: 081031400972 **Address:** 1401 Packers Ave

Seller:	REYNOLDS, EDWARD & DAVID	Purchaser:	REYCO MADISON, INC.
Date	Conveyence Type	Sales Price	Sale Included
9/1984	Other	\$0.00	1 Parcel(s)

Seller:		Purchaser:	
Date	Conveyence Type	Sales Price	Sale Included
9/1981	Other	\$153,000.00	1 Parcel(s)



City of Madison - Assessor's Office

Legal Description

(Notice: This description may be abbreviated and is for assessment purposes only. It should not be used to transfer property)

Parcel Number: 081031400972 Address: 1401 Packers Ave

Lot Number: 0

Block Number: 0

T8N R10E, SEC 31, PART SW 1/4 NE 1/4 & NW 1/4 SE 1/4, COME E 1/4 COR SD SEC, TH
89 DEG 39 MIN 19 SEC W ALG S LN OF NE 1/4 SD SEC 1314.35 FT TO POB,
S 00 DEG 10 MIN 31 SEC E 662.57 FT, TH N 89 DEG 39 MIN 19 SEC W 579.60 FT TO
INTERS NELY ROW PACKERS AVE & NLY ROW ABERG AVE, TH NWLY ALG SD ROW ON A CURVE
TO THE RIGHT, RAD 1896.86 FT, L. C. BEARS N 27 DEG 02 MIN 12 SEC W 1240.19
FT, TH CONT ALG SD ROW N 07 DEG 57 MIN 45 SEC W 235.43 FT, TH S 89 DEG 30 MIN
12 SEC E 1175.89 FT, TH S 00 DEG 09 MIN 55 SEC W 668.55 FT TO POB



City of Madison
Office of the City Treasurer
Tax Information

Tax year:	2000	Tax Type:	Real Estate
Account/Parcel No.:	081031400972	School District:	Madison
Location:	1401 Packers Ave	Class:	Commercial

PO BOX 628 MADISON WI 53701	Land Asmt:	390,500
	Impr Asmt:	0
	Total Asmt:	390,500

Taxes:	1st Half	2nd Half		
	(Due January 31)	(Due July 31)		
Taxes	4,940.45	4,940.45		
Lottery Credit	.00			
Specials	0.00		Mill rate:	.0253032
Charges	396.00		Est. Fair Market:	397,100
Omitted taxes	0.00			
Prepayments	0.00			
Installments	5,336.45	4,940.45	Total Due:	10,276.90
Prior year Taxes Owed:				
Mortgage Holder:				
Payments:	Amount	Type	Disposition*	Balance Due
01/18/2001	4,940.45	payment	partial payment	5,336.45

Tax payment information current as of 02/09/01 at 4:00 p.m.

*Contact Dane County Treasurer at (608)266-4151 for more information concerning second installment

Department of Revenue
Office of the City Assessor

City of
Madison



City-County Building, Room 101
210 Martin Luther King, Jr. Boulevard
Madison, Wisconsin 53710-0001
Telephone #: 608 266 4531

(TDD/Device for Deaf): 608 266 6573
FAX #: 608 266 4666

May 10, 1995

Reyco Madison Inc.
Attn: David Reynolds
P. O. Box 628
Madison, Wis. 53701

Attn: Objection Number 353
1401 Packers Avenue
0810-314-0097-2

Dear Mr. Reynolds:

Recently you filed an objection to the assessment of your commercial property. At that time, you received a form requesting additional information. Either the information has not been returned or there was information missing. Pursuant to section 70.47(8)(d), Wis. Stat., failure to submit the required forms and appropriate supporting documents will result in the current assessment being sustained. Please submit the following information:

Provide the sales you believe support your opinion of value for your vacant land parcel.

Detail how you arrived at your opinion of value.

Please return the requested information by May 19, 1995. If you have any questions, please contact me at (608) 267-8793.

Sincerely,

A handwritten signature in cursive script that reads "Judith Drouth". The signature is written in dark ink and is positioned above the printed name and title.

Judith Drouth
Commercial Appraiser

City of Madison
Office of the City Assessor

Objection Report
Commercial Property Assessments

January 1, 1995 Assessment Date

Objection Number: 353
Parcel Number: 0810-314-0097-2
Situs: 1401 Packers Avenue
Ownership: Reyco Madison Inc.
c/o David Reynolds
P. O. Box 628
Madison, Wisconsin 53701-0628
Agent: None
Commercial Appraiser: Judith Drousth
Assistant Assessor: Michael G. Kurth
Date: August 16, 1995

Subject Property



Parcel #: 0810-314-0097-2

Situs: 1401 Packers Avenue

Description: Vacant Land

Highest & Best Use: Commercial development as permitted by the zoning

Land Area: 1,302,270 S. F.

Zoning: M-1

Original 1995 Assessment: \$234,500 or \$0.18 per square foot

Appellant's Opinion of Value: \$153,000 or \$0.12 per square foot

Recommended 1995 Assessment: \$234,500 or \$0.18 per square foot

Issues:

The appellant states that the January 1, 1995 assessment is excessive because the City has requested no improvements.

The appellant's opinion of value is \$153,000 or \$0.12 per square foot.

Findings:

The City of Madison has not requested that no improvements be put on this land. In April 1990, the City of Madison and the County of Dane requested that the property owner cooperate in providing access for environmental monitoring. During the investigation period, they requested that any grading, filling, earthwork or other site work be coordinated with the City of Madison. The investigation was completed and the restrictions have been removed. Per Jim Voss of the City Attorney's Office and David Benzschawel of the City Engineering Office, the City has not taken the position that this property cannot be developed.

The appellant's opinion of value is the 1994 assessment. He has not submitted any information on why this is an appropriate assessment for 1995.

Valuation:

There has been no recent arm's-length sale of the subject property. There are sales of reasonably comparable properties available to value this parcel.

Attachment A details the sales comparison approach. These sales range in value from \$0.17 to \$0.34 per square foot. Sale number one is most similar to the subject property in size and zoning. A -20% adjustment should be made for location. The adjusted sale price would be \$0.18 per square foot. The subject property has 1,302,270 square feet. The resulting value for this property is \$234,500.

Recommendation:

I recommend that the January 1, 1995 assessment be sustained at \$234,500 or \$0.18 per square foot based on the sales comparison approach.

	Original 1995 Assessment	\$/SF	Revised 1995 Assessment	\$/SF	Difference
Land:	\$ 234,500	\$ 0.18	\$ 234,500	\$ 0.18	\$ 0
Improvements:	\$ 0	\$ 0.00	\$ 0	\$ 0.00	\$ 0
Total:	\$ 234,500	\$ 0.18	\$ 234,500	\$ 0.18	\$ 0


Judith Drouth, Commercial Property Appraiser

8/17/95
Date


Michael G. Kurth, Assistant Assessor

8/17/95
Date

Parcel Number: 0810-314-0097-2
Situs: 1401 Packers Avenue

Attachment #: A
Objection #: 353

SALES COMPARISON APPROACH TO VALUE - VACANT LAND SALES

1:	Situs:	2202 Vondron Road	Sale Price:	\$300,000
	Parcel Number:	0710-153-0098-3	Land Area:	30.29 Acres
	Sale Date:	June 1992	Sale Price/Acre:	\$ 9,900
	Zoning:	M-1	Sale Price/SF:	\$0.23
2:	Situs:	2500 Vondron Road	Sale Price:	\$375,000
	Parcel Number:	0710-221-0095-4	Land Area:	25.39 Acres
	Sale Date:	April 1992	Sale Price/Acre:	\$ 14,800
	Zoning:	M-1	Sale Price/SF:	\$0.34
3:	Situs:	5501 American Pkwy	Sale Price:	\$1,112,800
	Parcel Number:	Not available	Land Area:	152 Acres
	Sale Date:	February 1991	Sale Price/Acre:	\$ 7,300
	Zoning:	A	Sale Price/SF:	\$0.17
4:	Situs:	Burke Road	Sale Price:	\$1,100,000
	Parcel Number:	Not available	Land Area:	137 Acres
	Sale Date:	June 1990	Sale Price/Acre:	\$ 8,029
	Zoning:	A	Sale Price/SF:	\$0.18

0353

OBJECTION NO.

1995 OBJECTION TO REAL ESTATE ASSESSMENT
SEC. 70.47(7) WISCONSIN STATUTES
Madison, Wisconsin

BOA	BOR
HR #	
DATE	

SHOULD YOU WISH TO CONTEST YOUR ASSESSMENT, THIS OBJECTION FORM MUST BE FILED WITH THE OFFICE OF THE CITY ASSESSOR PRIOR TO 4:30 PM, APRIL 28, 1995 IN ROOM 101, CITY-COUNTY BUILDING, MADISON, WISCONSIN 53710

TO BE COMPLETED BY ASSESSOR

Owner	REYCO MADISON, - INC.	Parcel Number	0810-314-0097-2
Mailing Address	PO BOX 628	Assmt Area	912 TIF #
City, State, Zip	MADISON, WI 53701-0628	Class	M-1 VACANT
Property Address	1401 PACKERS AVE		353

1995 ASSESSMENT	
Land	234,500
Improvements	0
TOTAL	234,500

RECEIVED

APR 13 1995

ASSESSOR'S OFFICE
CITY OF MADISON

TO BE COMPLETED BY PROPERTY OWNER

OBJECTION IS HEREBY MADE TO THE ABOVE ASSESSMENT FOR THE FOLLOWING REASONS: Assessment should remain at previous amount. City has requested no improvements

IT IS REQUESTED THAT THIS ASSESSMENT BE REVIEWED AS PROVIDED BY LAW. THE RESULTS OF THIS REVIEW WILL BE TO EITHER LOWER, SUSTAIN OR RAISE THE PRESENT ASSESSMENT. IN SUPPORT OF THIS OBJECTION THE FOLLOWING PERTINENT INFORMATION IS SUBMITTED:

1. What is your opinion of the fair market value of this property as of January 1, 1995? \$152,000

2. Date property was acquired 1982 and price paid \$ 150,000 THIS INFORMATION MUST BE FILLED OUT

3. Was this property acquired by purchase purchase & construction ___ gift ___ trade ___ other (explain) ___

4. What improvements (eg. additions, remodeling, replacements, new construction, etc.) have been made since you acquired the property?

Date	Description	Cost
	<u>None</u>	\$
		\$
		\$

5. Do you intend to be represented by an Agent or Attorney? Yes ___ No If yes, complete Agent Authorization Form.

6. Agent or Attorney's name and mailing address N/A

7. If an appraisal was completed within the last 2 years, please attach a copy.

Last private appraisal by N/A

Owner's Signature [Signature] Name of person or company N/A Date 12 April 95

Telephone (home) 257-2216 (business) 249-1013

RETURN TO ASSESSOR'S OFFICE

City of Madison - Office of the City Assessor
Request for Additional Information - Commercial Assessments
This form must be filed with the *Objection to Real Estate Assessment* form

Parcel No.: 0810-314-0097-2 Objection No.: 353
Owner: Reyer Madison, Inc

Please complete the information below. If this property is leased, you must attach the 1994 operating statement, the January 1, 1995 rent roll and either IRS Form 8825 or IRS Schedule E. This information will be used by the Assessor's Office, the Board of Assessors and the Board of Review in determining the proper assessment of your property.

Section 70.47(8)(d), Wis. Stats. provides that the Board of Review "upon request of the assessor shall compel the attendance of witnesses, and the production of all books, inventories, appraisals, documents and other data which may throw light upon the value of the property." Pursuant to Section 70.47(8)(d), please submit the information requested on this form with the completed *Objection to Real Estate Assessment* form. **Failure to submit this form and the information requested above by the filing deadline may result in the current assessment being sustained.**

Mortgage information:

	Mortgage Amount	Lending Institution
1st:	\$ <u>None</u>	_____
2nd:	\$ _____	_____
3rd:	\$ _____	_____

Insurance information:

Value: \$ None Name of Insurer: _____
Basis of value: _____

Listing information: (Please provide a copy of the current listing contract)

List Price: \$ None Listing Date: _____
Broker: _____

Appraisal information: (Please provide a copy of any appraisal completed in the last three years)

Value: \$ None Date: _____
Appraiser: _____

Note: If this objection is appealed to the Board of Review, the above appraiser may be required to testify.

Please submit any additional information in your possession to support your opinion of value. If this property is a vacant land parcel, please submit comparable land sales or an appraisal to support your opinion of value.

Name of Person Completing this Form: David H. Reynolds (please print)
Signature: David H. Reynolds Phone No.: 249-1013

Appendix E

**Documents Acquired from the City of Madison
Planning and Development Department**

State of Wisconsin
 Department of Industry,
 Labor & Human Relations
 Division of Safety & Buildings
 201 E. Washington Ave.
 Box 7969
 Madison, WI 53707
 Wisconsin Statute 101.63

13-251

Wisconsin Uniform
 Building Permit Application

PERMIT NO.
B-01696

PARCEL NO.

PROJECT LOCATION

CONSTRUCTION HVAC ELEC PLUMB

Building Address: 1401 Packers Ave Phone: _____ Lot No.: _____ Block No.: _____
 No. _____ Direction _____ Street Name _____ Type _____ Suite No. _____

Zoning District: M1 Lot Area: _____ sq. ft. Setbacks: Front _____ ft. Rear _____ ft. Left _____ ft. Right _____ ft.

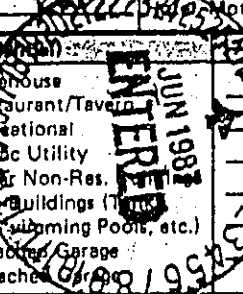
PERMIT REQUESTED

_____ % _____ % Section _____, T _____ N, R _____ E (or) W

Contractor Name: Madison Grading & Excavating Mailing Address: _____ Phone: _____ Identification No.: 020143

Owner Name: Seeco-Madison Inc Mailing Address: 301 S. 23rd Ave St Madison 53102
 Owner Project Federal Project
 Tenant Project City Project

1. PROJECT <input type="checkbox"/> New <input type="checkbox"/> Alteration <input type="checkbox"/> Addition <input type="checkbox"/> Combination (Alt. & Add'n.) <input type="checkbox"/> Non-Permanent (Tenit, etc.) <input type="checkbox"/> Repair <input checked="" type="checkbox"/> Raze <input type="checkbox"/> Move <input type="checkbox"/> Foundation <input type="checkbox"/> Zoning Only <input type="checkbox"/> Change of Use (Tenit, etc.)	2. USE <input type="checkbox"/> Residential <input checked="" type="checkbox"/> Non-Residential	3. ELECTRICAL Entrance Panel Size: _____ amp Service: <input type="checkbox"/> Underground <input type="checkbox"/> Overhead	4. HVAC <input type="checkbox"/> Forced Air <input type="checkbox"/> Hot Water <input type="checkbox"/> Heat Pump <input type="checkbox"/> Steam or Vapor <input type="checkbox"/> Central Air Conditioning <input type="checkbox"/> Other _____	5. ENERGY SOURCES Fuel: LP Gas <input type="checkbox"/> Nat. Gas <input type="checkbox"/> Fuel Oil <input type="checkbox"/> Electric <input type="checkbox"/> Wood <input type="checkbox"/> Solar <input type="checkbox"/> Coal <input type="checkbox"/> Space Htg. <input type="checkbox"/> Water Htg. <input type="checkbox"/>
9. AREA (Outside Dimension) Basements (below grade floors) _____ sq. ft. Usable Area (grade floor and above) _____ sq. ft. Garage _____ sq. ft. TOTAL _____ sq. ft.	6. CONST. TYPE <input type="checkbox"/> Site constructed <input type="checkbox"/> Manufactured	7. FOUNDATION <input type="checkbox"/> Concrete <input type="checkbox"/> Masonry <input type="checkbox"/> Treated Wood <input type="checkbox"/> Other _____	8. PLUMBING Sewer: <input type="checkbox"/> Municipal <input type="checkbox"/> Septic - Permit No. _____	12. WATER <input type="checkbox"/> Private Utility <input type="checkbox"/> Municipal Utility <input type="checkbox"/> On-site Well & Pump
	10. STORIES (Above Grade) <input type="checkbox"/> 1-Story <input checked="" type="checkbox"/> 2-Story <input type="checkbox"/> Other <u>TANKS</u>	11. USE (Res.) <input type="checkbox"/> Seasonal <input type="checkbox"/> Permanent <input checked="" type="checkbox"/> Other <u>REPAIR</u>	13. RES. UNITS Added or Deleted Family(s) _____ Condominium(s) _____ Motel, Dorm. _____	14. HEAT LOSS (Calculated) Envelope _____ BTU/HR Infiltration _____ BTU/HR

15. CLASS OF CONSTRUCTION <input type="checkbox"/> 1. Fire Resistive Type A <input type="checkbox"/> 2. Fire Resistive Type B <input type="checkbox"/> 3. Metal Frame - Protected <input type="checkbox"/> 4. Heavy Timber <input checked="" type="checkbox"/> 5a. Ext. Masonry - Protected <input type="checkbox"/> 5b. Ext. Masonry - Unprotected <input type="checkbox"/> 6. Metal Frame - Unprotected <input type="checkbox"/> 7. Wood Frame - Protected <input type="checkbox"/> 8. Wood Frame - Unprotected	16. TYPE OF USE (Non-Residential) <input type="checkbox"/> Amusement, Recr. <input type="checkbox"/> Church, Religious <input type="checkbox"/> Industrial <input type="checkbox"/> Parking Garage, Lots <input type="checkbox"/> Service Station, Repair Garage <input type="checkbox"/> Hospital, Inst'l. <input type="checkbox"/> Office, Bank, Prof. <input type="checkbox"/> Stores, Mercantile <input type="checkbox"/> Warehouse <input type="checkbox"/> Restaurant/Tavern <input type="checkbox"/> Educational <input type="checkbox"/> Public Utility <input type="checkbox"/> Other Non-Res. <input type="checkbox"/> Multi-Buildings (Theaters, Swimming Pools, etc.) <input type="checkbox"/> Attached Garage <input type="checkbox"/> Detached Garage	17. BRIEFLY DESCRIBE PROJECT <u>Remove Concrete Tanks & Structures</u> 
---	--	---

NOTE: Mechanical Supplement sheets provided with this application must be completed and returned to the Inspection Unit by the appropriate Plumbing, HVAC, and Electrical contractors prior to start of work. No inspections will be made until received.

18. ESTIMATED COST
 \$ 1,000.00

The applicant agrees to comply with the Wisconsin Uniform Dwelling Code and other Municipal Ordinances and with the conditions of this permit; understands that the issuance of the permit creates no legal liability, express or implied, on the Department or Municipality; and certifies that information is accurate.

19. SIGNATURE OF APPLICANT Ronald P. Reynolds DATE 26 June 1987

20. FEES

Plan Review \$
Inspection \$
c/o \$
Erosion \$
Wis. Permit Seal \$
Parking \$
Start Work \$
Sewer \$
Wrecking \$ <u>15.00</u>
Tent/Awning \$
Other \$
TOTAL	\$ <u>16.00</u>
Voucher No.	<u>95332</u>

22. FEE GROUP 7

21. CONDITIONS OF APPROVAL This permit is issued pursuant to the following conditions. Failure to comply may result in suspension or revocation of this permit or other penalty.

COAPMT LANDFILL OK

APPROVALS BY: Zoning: Yes No
 Architect or Professional Engineer: Yes No
 State of Wisconsin Plan No. _____

Landmarks Commission: Yes No
 C-4 Exterior Approval: Yes No

23. PERMIT FEES PAID
 Construction and Other
 HVAC
 Electrical
 Plumbing
 Certificate of Occupancy

24. PERMIT ISSUED BY
 NAME: WB (MIV)
 DATE ISSUED: Mo 6 Day 1 Year 1987
 CERT. NO. _____

CITY OF MADISON, WISCONSIN CODE ENFORCEMENT WORKSHEET

CASE NUMBER
87-06535

LOCATION

HOUSE NUMBER	DIR	STREET NAME	TYPE
1401		Packers	Res

NAME OF BUSINESS PERSON TO CONTACT ETC.	TAV.COM

- COMPLAINT 12/22/87
- FIELD OBSERVATION
- REFERRAL
- PROGRAMMED HCC
- OTHER APC

ACT. INSP.	DATE	OPER.
CODE	INITIALS	MO DA YR
ASSIGN TO	RMT	12/22/87
		SH

REMARKS
Filling w/o Erosion Control

OWNER
 NAME: Reynolds Madison, Inc (David H. Reynolds) 274-2348
 ADDRESS, CITY, STATE: 1130 Waban Hill ZIP CODE: (11)

21	Rmt	12/23/87	SH
32	Rmt	2/15/88	SH
51	rah	12/29/87	SH
92	Rmt	2/14/88	RAE

NO. OF UNITS INSPECTED
NO. OF UNITS ACCESSIBLE DISAB.
NO. OF DEFECTS ON ORDERS

NOTES
 12/23/87
 Red Truck Hauled
 Dirt empty - Come out

DETERMINATION

<input checked="" type="checkbox"/>	ZONING
<input type="checkbox"/>	SNOW
<input type="checkbox"/>	ENERGY
<input type="checkbox"/>	PLBO.
<input type="checkbox"/>	HTG.
<input type="checkbox"/>	ELEC
<input type="checkbox"/>	STRAUC.
<input type="checkbox"/>	PROP MTC.
<input type="checkbox"/>	WEEDS
<input type="checkbox"/>	SECURITY

1-8 OBSERVED CONDITIONS
 INTERIOR EXTERIOR

DATE ENFRY. CERTIFICATE ISSUED

OCCUPANCY

TYPE	OWNER OCC	NO. UNITS	NO. STALLS	SURFACE
	YES NO			

UNIT NUMBER					
NUMBER OF PEOPLE R OR U					
NO OF BEDROOMS					

INSPECTOR
R M [Signature]

93 Rmt 2/11/88 RAE

NEW CASE NO.

- | | | | | |
|-----------------------|------------------------------|---------------------|------------------|-------------------------------|
| 1-1 COMPLAINT | 2-1 INSPECTION | 3-1 ORDERS | 4-1 SENT TO C.A. | 5-1 TRIAL |
| 1-2 FIELD OBSERVATION | 2-2 RE-INSPECTION | 3-2 VERIFY | 4-2 HILD FINE | 5-2 VERIFY |
| 1-3 REFERRAL | 2-3 POTENTIAL RENT ABATEMENT | 3-3 EXTENDED VERIFY | 4-3 HEARING | 9-4 NON COMPLIANCE - HARDSHIP |
| 1-4 PROGRAMMED | 2-4 POSTED NO OCCUPANCY | 3-4 CITATION | | 9-5 NEW CASE |
| 1-5 OTHER | | | | 9-6 CLOSED - NO TIME |
| | | | | 9-7 FINE PAID |

1/50

City of Madison OFFICIAL NOTICE

87-06535

Notice: An inspection discloses that certain sections of the City Ordinances are being violated.

Page 1

From: Inspection Unit
215 Martin Luther King Jr. Blvd.
Madison, Wisconsin 53710

Property Located at: 1401 Packers Avenue

Rayco Madison, Inc.

Owner's Name: Rayco Madison, Inc.

Address: (David H. Reynolds)
1130 Waban Hill
Madison, WI 53711

Violating Section No.	CORRECTIONS REQUIRED	
37.05 37.06 37.08	<p>COMPLAINT INSPECTION</p> <p>Apply for and obtain a land disturbing, filling, erosion control permit for the land filling activity going on at 1401 Packers Avenue.</p> <p>When applying for said permit, a control plan is to be submitted for review. The control plan shall contain such information needed to determine soil erosion, sedimentation and run off control.</p> <p>Contact City Engineering for details needed.</p> <p>Said permit is good for 6 months from the date of issue. Said permit has to be renewed every 6 months that activity is going on.</p> <p>The above is to be done February 15, 1988.</p>	
	<p>This notice does not start any legal action. However, if the violations are not corrected by the due date listed below, the Inspection Unit will refer the situation to the City Attorney's Office.</p> <p>The Inspection Unit is willing to answer questions pertaining to this official notice in order to assist you in correcting the violations. <u>If you have questions or problems, it is important to contact me before the due date at the number listed below.</u> You should also contact me on or before the due date if you wish to attend the follow up inspection.</p>	

Please notify the inspector when work is completed. Telephone: 266-4495

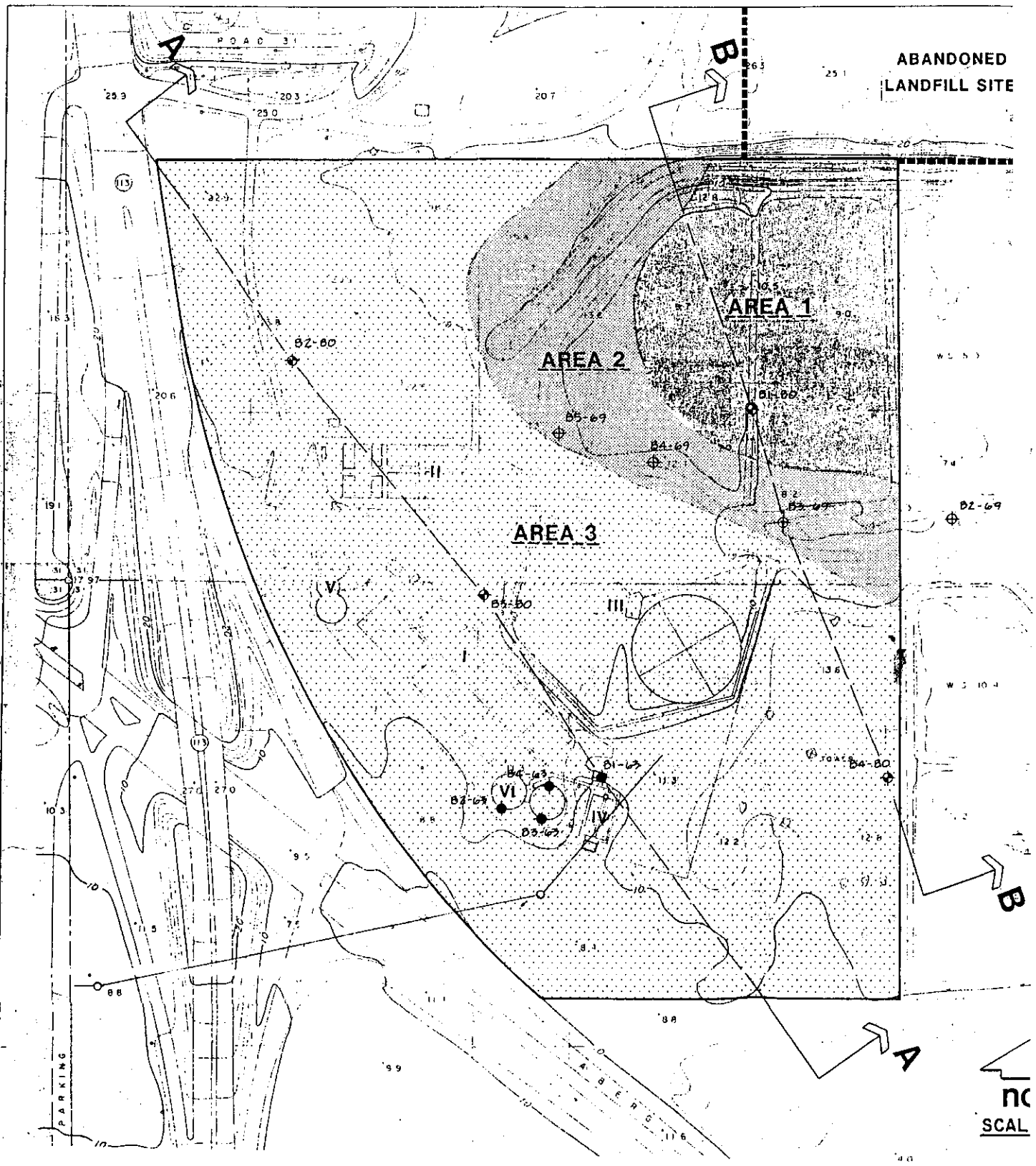
Inspected By: R. M. Turner On: 12-23-87 Date Issued: 12-29-87

The violations shall be corrected on or before: February 15, 1988

Code Enforcement Officer: R M Turner

person violating any provision of the City Ordinances enforced by the Inspection Unit is subject to the penalties provided by the appropriate Ordinance. ALL APPLICATIONS FOR APPEAL OF CHAPTERS 17, 18, 19, 27, 28, 29, 30 and 31 SHALL BE SUBMITTED TO THE INSPECTION SUPERINTENDENT IN WRITING WITHIN FIFTEEN (15) DAYS OF POSTMARK ON OFFICIAL NOTICE ENVELOPE. Appeal information may be obtained by calling 266-4661.

**ABANDONED
LANDFILL SITE**



NOTES

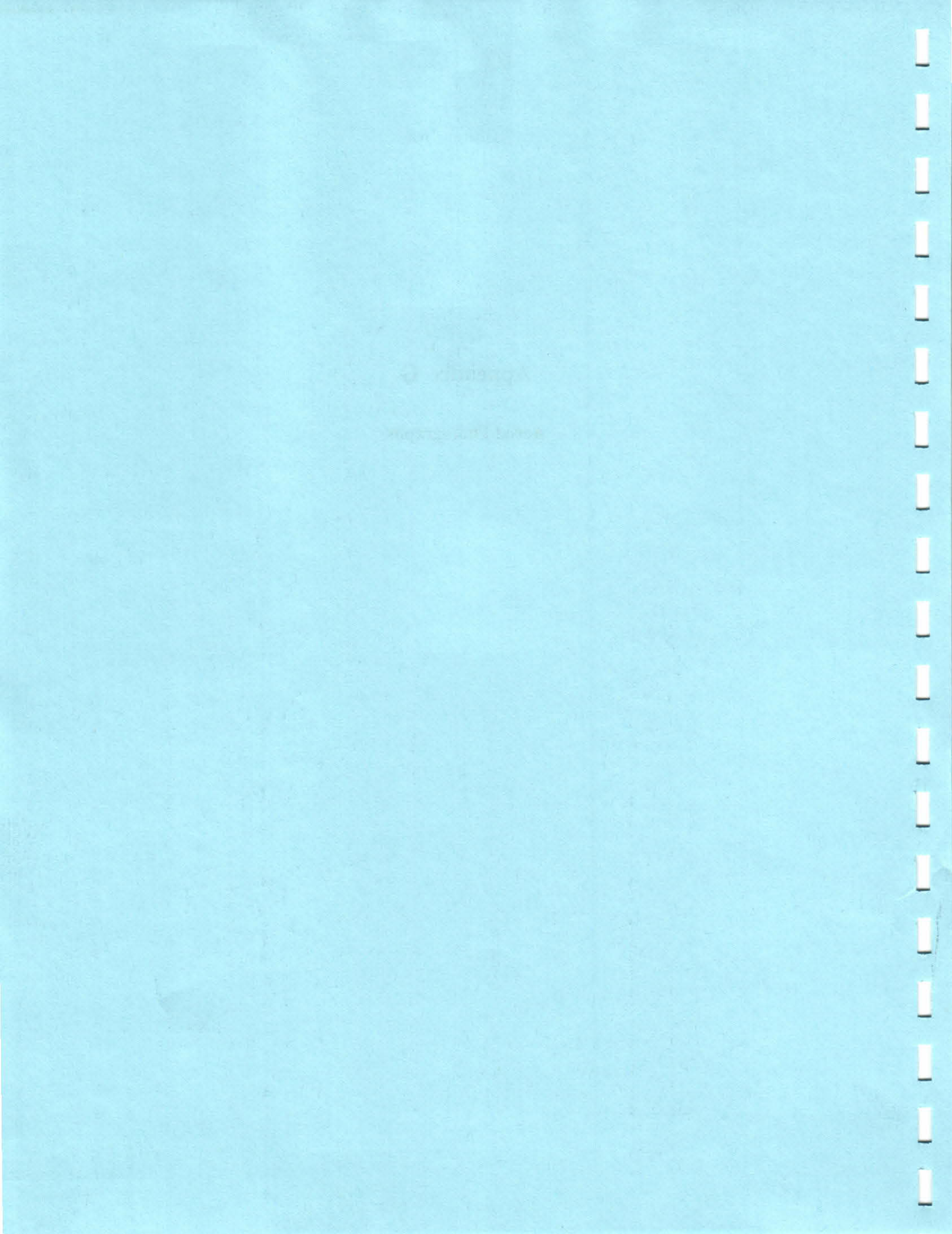
- 1) THE PLAN OF SITE AND TOPOGRAPHY WAS PROVIDED BY THE CITY OF MADISON.
- 2) BORING LOCATIONS AND SHADED AREAS BY WARRYN ENGINEERING INC.

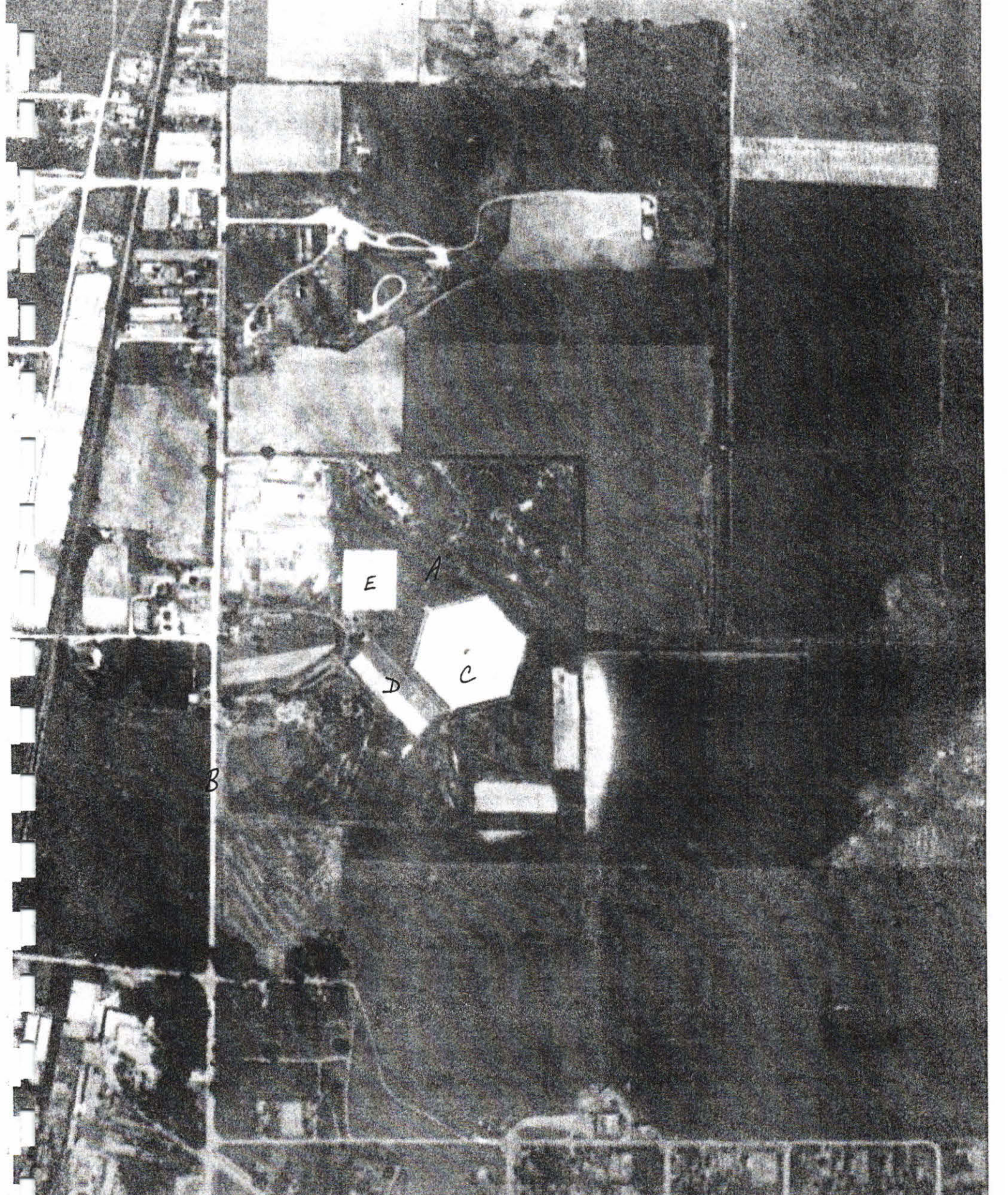
LEGEND

- AREA 3 - DODGE SOIL SERIES
- AREA 2 - SABLE SOIL SERIES
- AREA 1 - PALMS SOIL SERIES
- B1-80 BORING PERFORMED IN 1980
- B2-69 BORING PERFORMED IN 1969
- B2-63 BORING PERFORMED IN 1963
- I** SLUDGE BEDS
- II** SEDIMENTATION TANKS
- III** SPRINKLING FILTERS
- IV** FINAL SETTLING TANKS
- V** SLUDGE BUILDING AND DIGESTORS
- VI** FINAL CLARIFIERS

Appendix G

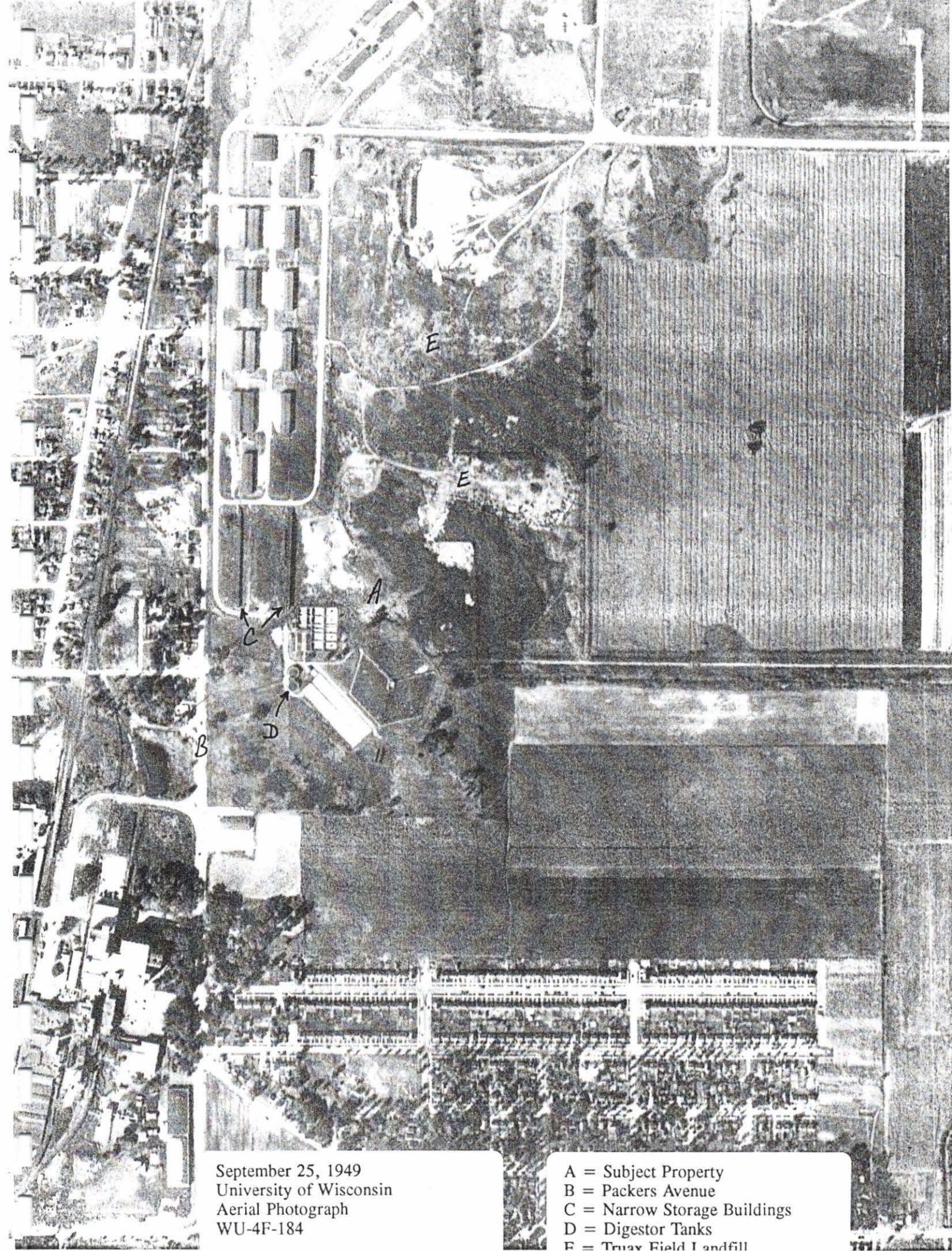
Aerial Photographs





July 6, 1937
University of Wisconsin
Aerial Photograph
WU-7-507

A = Subject Property
B = Packers Avenue
C = Trickling Filter
D = Sludge Beds
E = Sedimentation Tanks



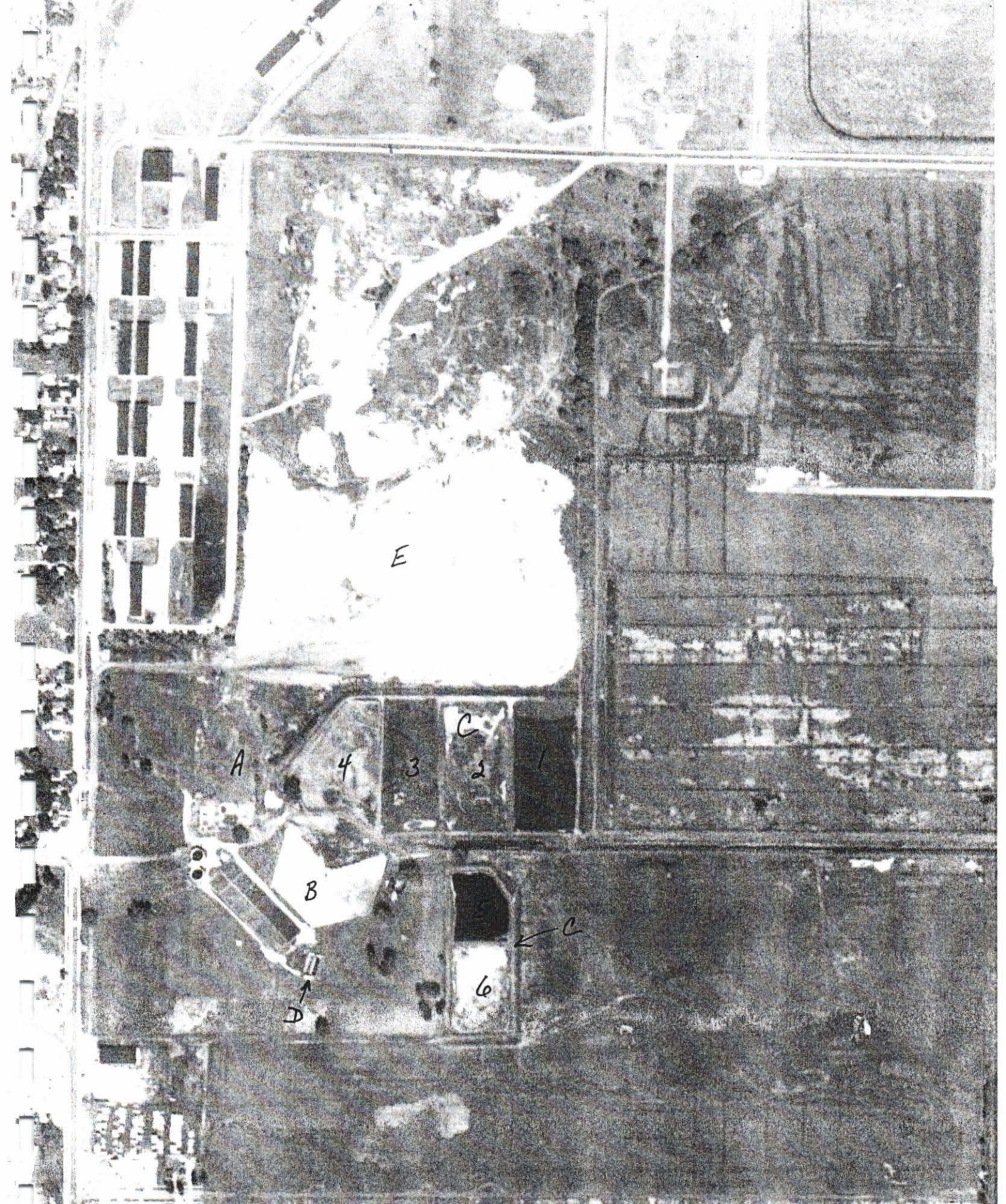
September 25, 1949
University of Wisconsin
Aerial Photograph
WU-4F-184

- A = Subject Property
- B = Packers Avenue
- C = Narrow Storage Buildings
- D = Digester Tanks
- E = Trux Field Landfill



May 1, 1957
University of Wisconsin
Aerial Photograph
1-104

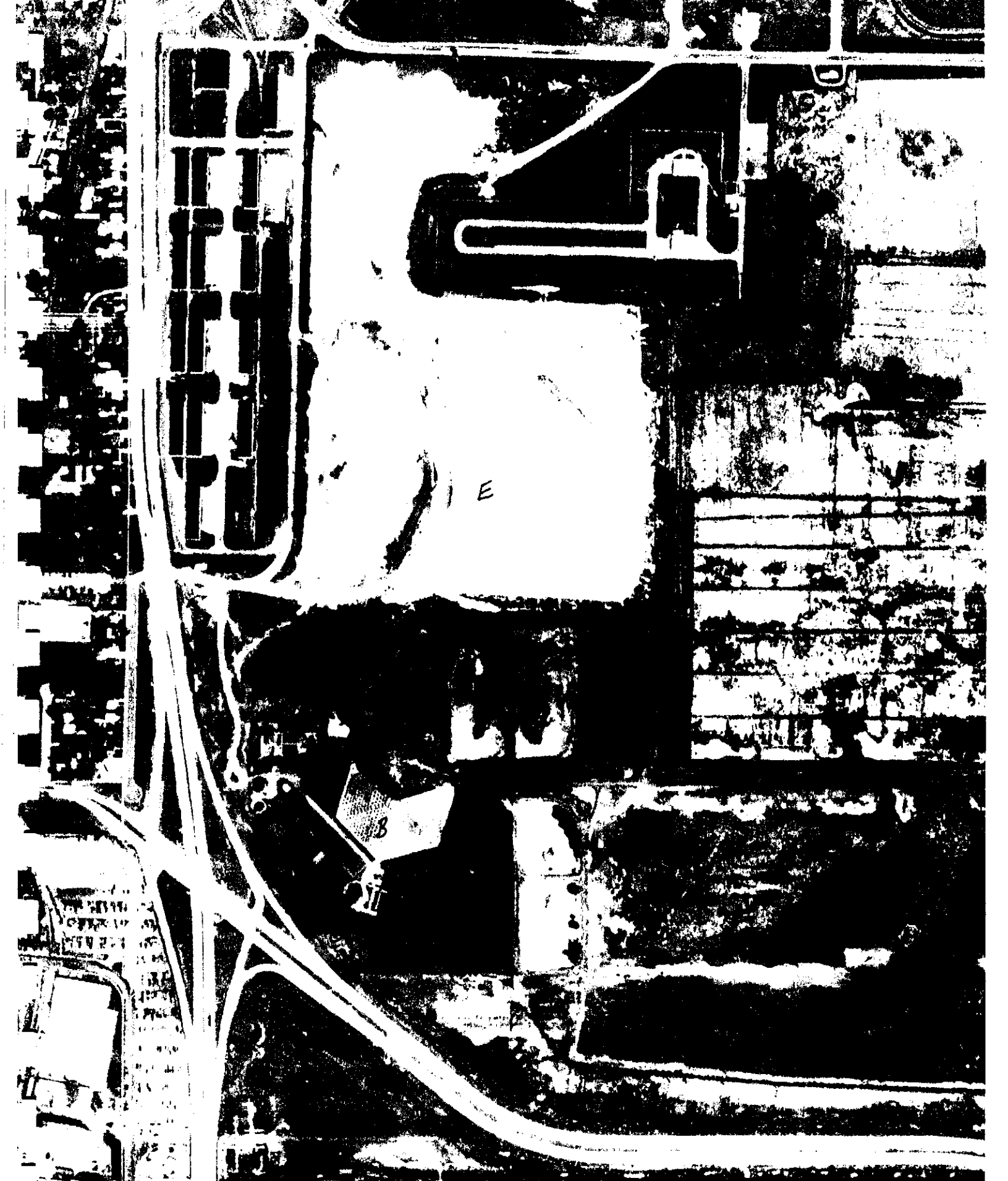
- A = Subject Property
- B = Packers Avenue
- C = Sludge Lagoons
- D = Sludge Beds
- F = Truax Field Landfill



September 7, 1962
University of Wisconsin
Aerial Photograph
WU-3CC-187

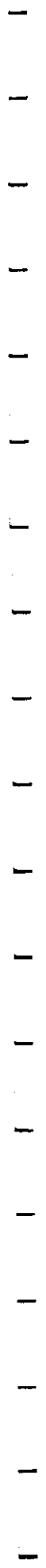
A = Subject Property
B = Trickling Filter
C = Sludge Lagoons
D = Final Settling Tanks
E = Trux Field Landfill

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100



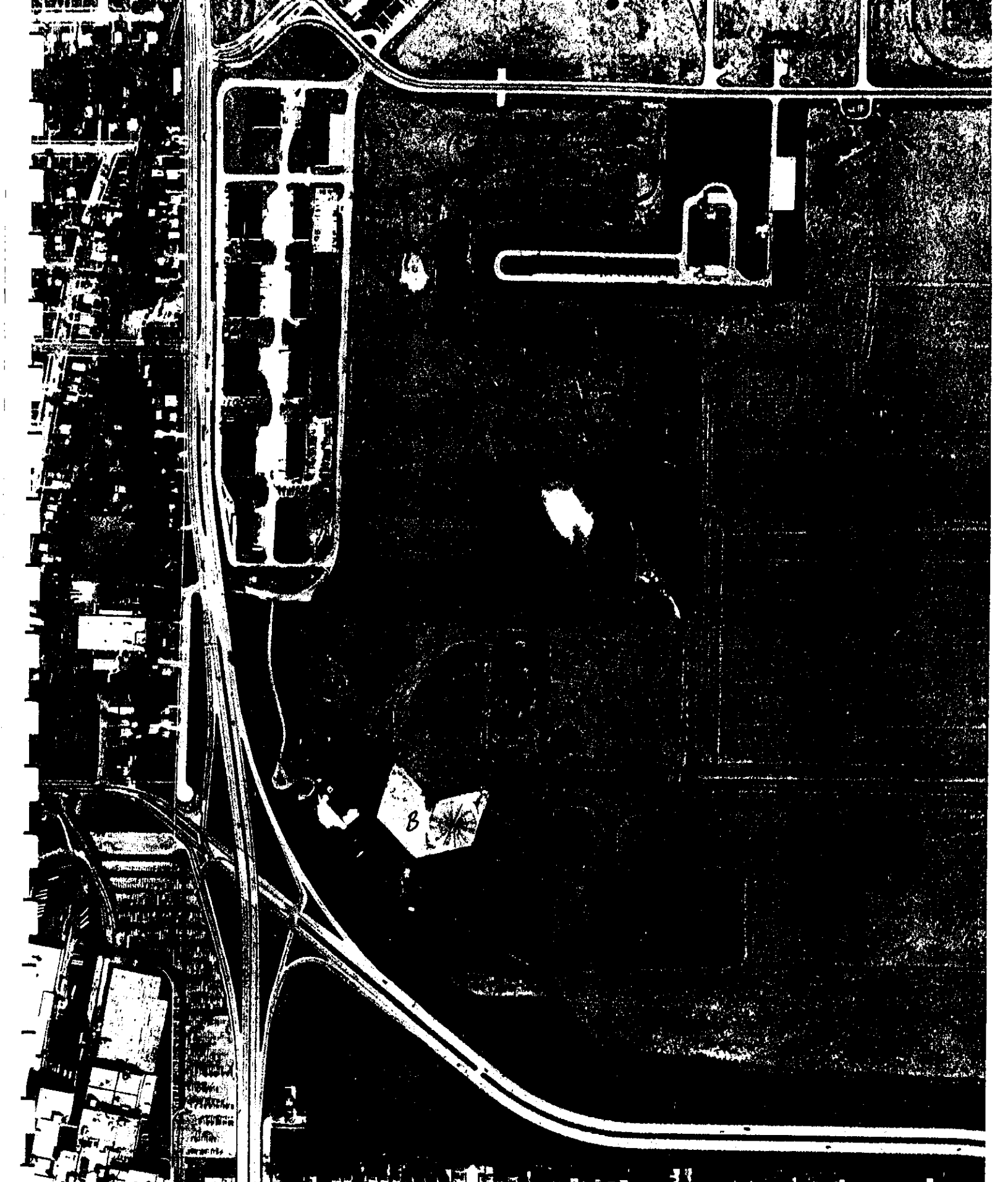
May 8, 1968
University of Wisconsin
Aerial Photograph
WU-2JJ-28

- A = Subject Property
- B = Tricking Filter
- C = Final Clarifiers
- D = Sludge Beds
- E = Truax Field Landfill



September 12, 1976
University of Wisconsin
Aerial Photograph
376-23

A = Subject Property
B = Former Sludge Lagoons 1 & 2
C = Aberg Avenue
D = Digester Tanks
E = Closed Truax Field Landfill

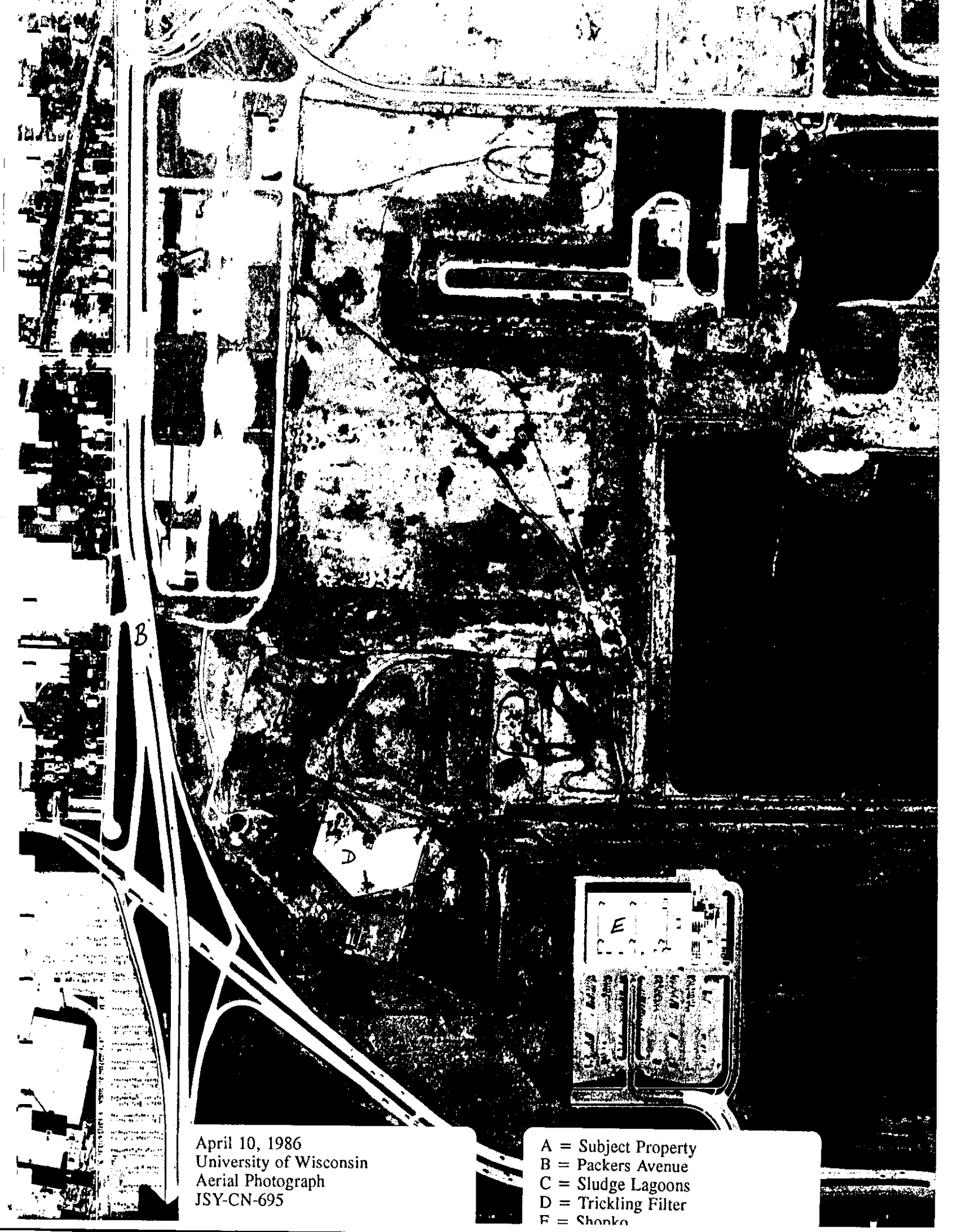


April 22, 1980
University of Wisconsin
Aerial Photograph
25-27



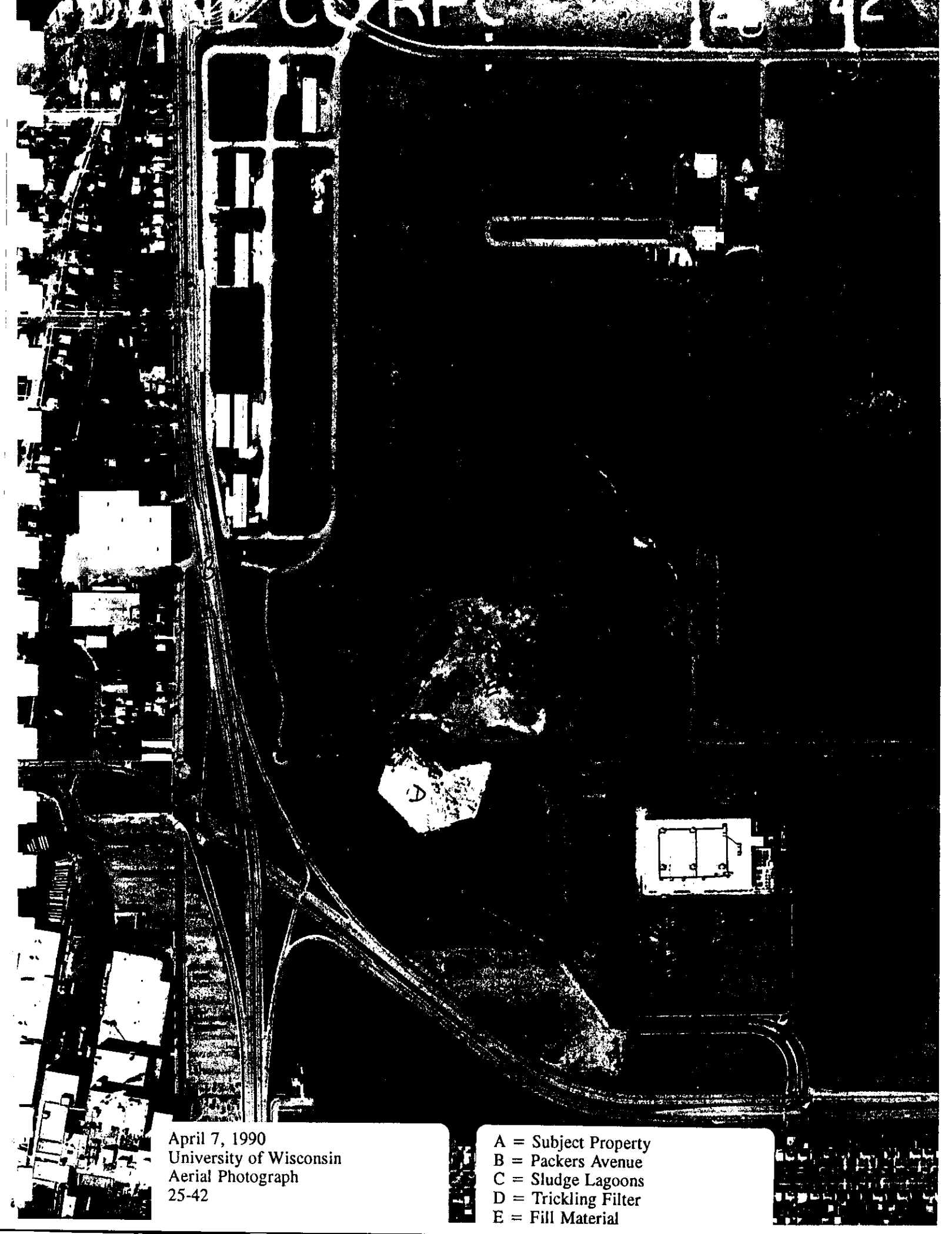
- A = Subject Property
- B = Trickling Filter
- C = Sludge Lagoons
- D = Sludge Beds
- E = Closed Truxy Field Landfill





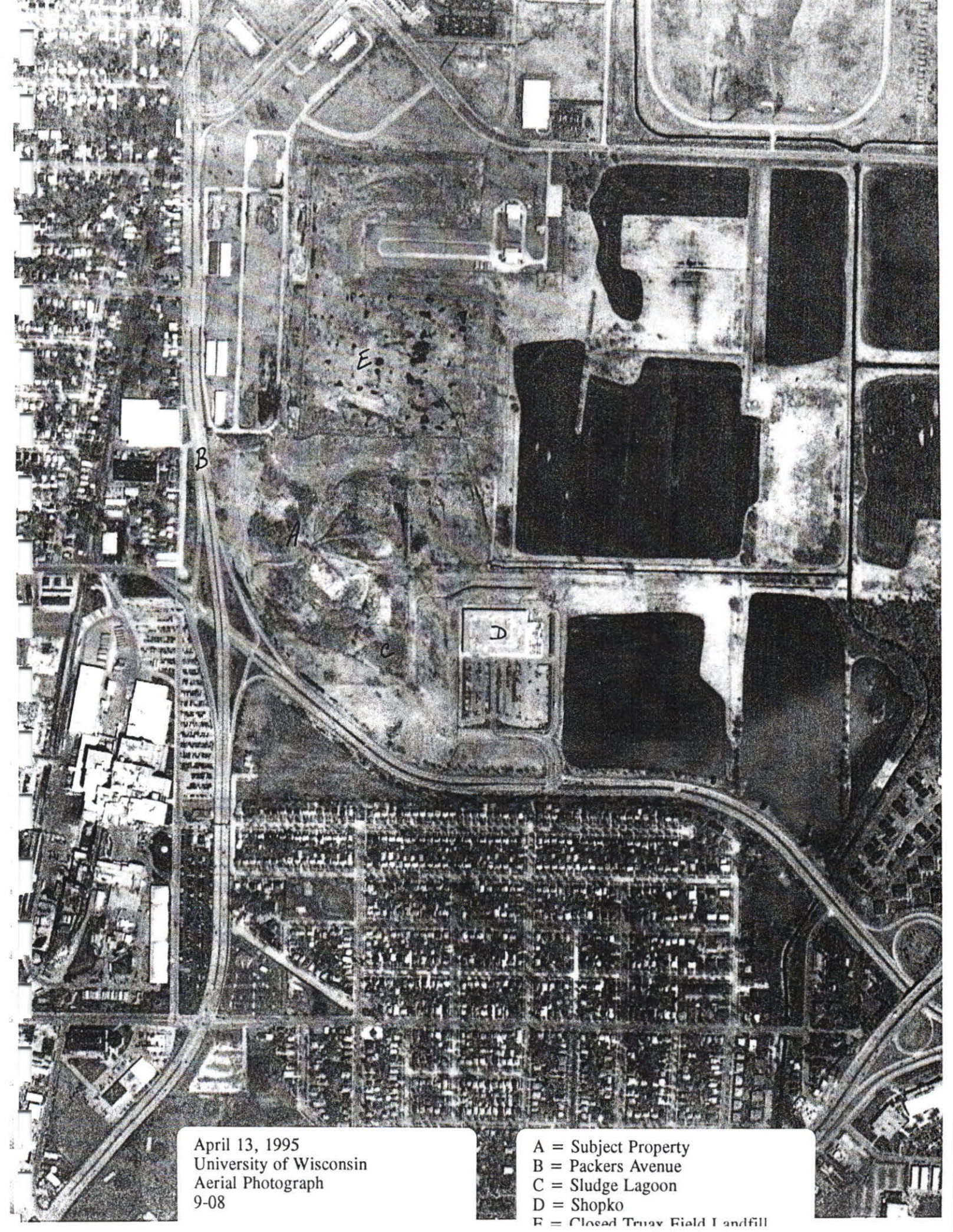
April 10, 1986
University of Wisconsin
Aerial Photograph
JSY-CN-695

- A = Subject Property
- B = Packers Avenue
- C = Sludge Lagoons
- D = Trickling Filter
- E = Shonko



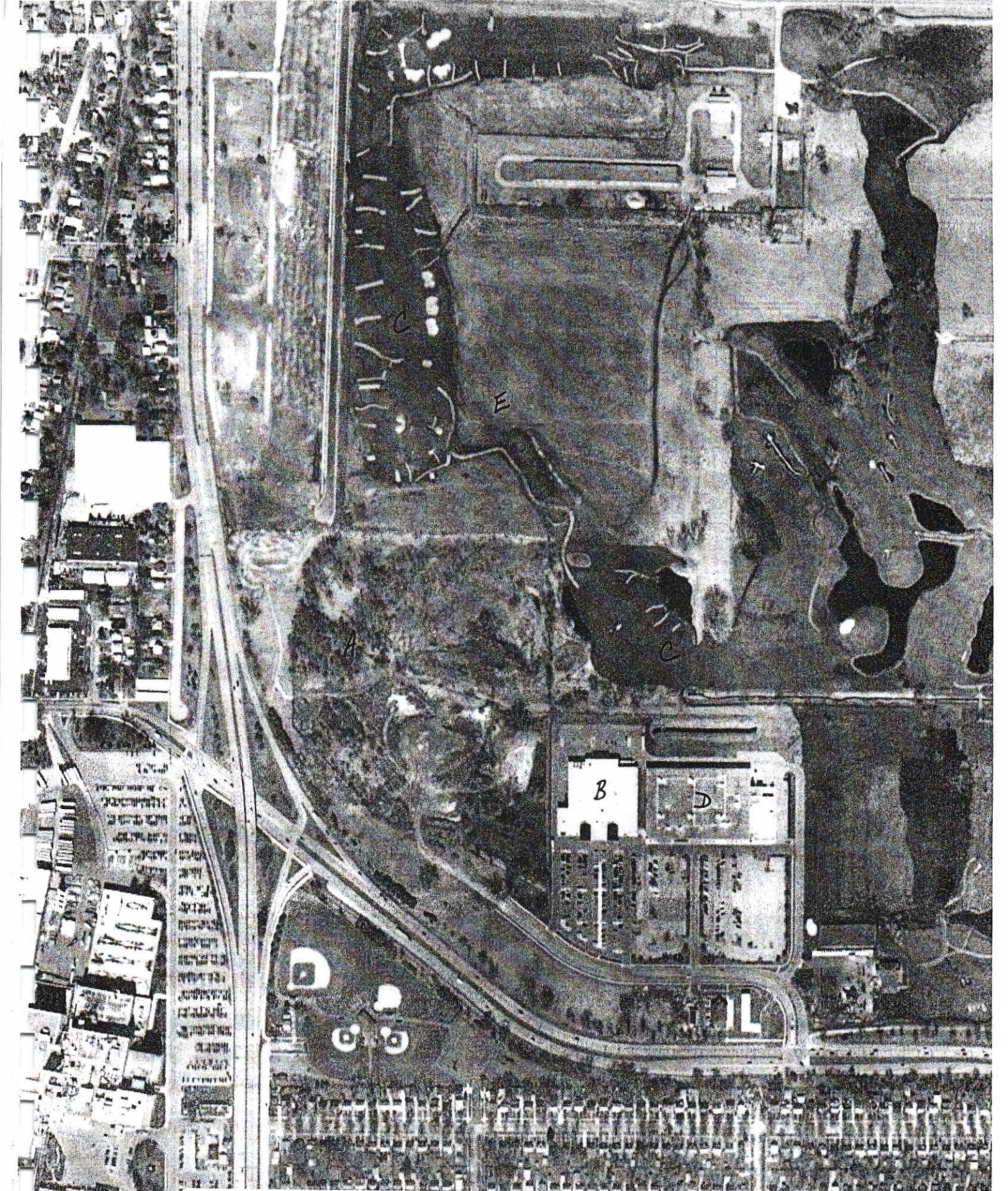
April 7, 1990
University of Wisconsin
Aerial Photograph
25-42

- A = Subject Property
- B = Packers Avenue
- C = Sludge Lagoons
- D = Trickling Filter
- E = Fill Material

An aerial photograph of an industrial site, likely a wastewater treatment plant, with several large rectangular basins and a central area. The image is annotated with letters A through E. A road, Packers Avenue, runs vertically on the left side. A residential area is visible at the bottom of the image. The photograph is dated April 13, 1995.

April 13, 1995
University of Wisconsin
Aerial Photograph
9-08

A = Subject Property
B = Packers Avenue
C = Sludge Lagoon
D = Shopko
E = Closed Trux Field Landfill



March 16, 2000
University of Wisconsin
Aerial Photograph
13-12

A = Subject Property
B = Copps
C = Bridges Golf Course
D = Shopko
E = Closed Truax Field Landfill

MADISON METROPOLITAN SEWERAGE DISTRICT

COMMISSIONERS

CHARLES V. SEASTONE, PRESIDENT
FRANK C. BLIED, SECRETARY
JOHN C. WHITE

~~140 EAST MAIN STREET~~

MADISON, WISCONSIN
218 North First Street

HERBERT O. LORD, CHIEF ENGINEER
JOHN C. MACKIN, SUPERINTENDENT OF
OPERATION

March 16, 1937

Mr. William Ryan
Madison Metropolitan Sewerage District
Wisconsin Power and Light Building
124 West Washington Avenue
Madison, Wisconsin

Dear Mr. Ryan:

As I mentioned at our conference relating to the Oscar Mayer Packing House waste problems, I am setting forth the picture as I have seen it develop.

The City of Madison first recognized the need for preliminary treatment of packing house waste due to their experience at the Burke Plant. This experience indicated that when packing house waste was mixed with domestic sewage the load on the treatment works was such that ordinary light loadings (considered with respect to domestic sewage) would not produce even fair results; the one filter at the Burke Works which received domestic sewage only, however, was producing fairly good results. And so in September and October of 1933, the Mayor of the City wrote a letter to all of the packing companies of any size ~~as follows~~: (A copy of the questionnaire form sent to each is attached.) Letters were also addressed to all of the ~~consulting~~ ^{City} engineers--a copy of which is attached--on the basis of the replies the city was about to engage an experienced consulting engineer to look into the problem and make recommendation when one member of the Council stated, subject to publication, that there was plenty of competent talent here in the city to consider the problem. A following for this point of view developed immediately, and perhaps especially since an economy would result, Dr. Domogalla was assigned the problem of making an investigation with funds appropriated by the Oscar Mayer and Company as well as the City of Madison. This study continued from 1934 to 1936 and on the basis of this study it was first decided to segregate the wastes into two fractions: A strong fraction that would require considerable treatment to bring its strength down to that comparable to the strength of domestic sewage, and a weak fraction for which screening and sedimentation only would be necessary to produce a waste comparable to domestic sewage.

Plumbing and piping changes in the packing company were necessary to effect the segregation.* In the meantime after very many laboratory tests had been conducted along the lines of chemical precipitation and after considerable inquiry had been made considering

*Then too, certain plant operations were supposedly changed and improved to increase efficiency of conservation in packing plant processes, thereby causing an improvement in the wastes produced.

the feasibility of chlorination for activated sludge as a treatment possibility, a small scale treatment plant was set up at the packing company to demonstrate in a preliminary way the feasibility of chemical treatment of the strong fraction. Volumes were estimated and it was concluded that the strong fraction would be 30 to 40% of the total flow and the weak fraction from 60 or 70%. The officials of the District had occasion to visit the experimental plant and observe the excellent results that were produced on a waste which was understood to be typical of the strong fraction. (It is possible that some strong wastes from the different processes used in the packing industry may not have been included in the strong mixture used in the small scale plant studies.) The problem was approached with the aim of reducing the "fat" content to a concentration of less than 100 p.p.m., and the B.O.D. was to be reduced to a concentration of less than the B.O.D. of the average Madison domestic sewage, the concentration of the suspended solids was to be reduced similarly; the Nitrogen was to be reduced as much as possible since it was apparent it was totally impossible to reduce the Nitrogen concentration to that of Madison domestic sewage.

On the basis of the results obtained with the small scale experimental plant Oscar Mayer and Company proceeded with the construction of their waste treatment plant to provide for the production of an effluent which they considered would have characteristics comparable to a mixture of the weak waste (sampled in the preliminary studies) and the strong treated effluent produced by the experimental plant. If the effluent from the full scale treatment plant corresponded to a mixture of the weak wastes (as analyzed individually) mixed with the effluent from the small scale experimental treatment works (treating what was assumed to be a representative strong waste) it was deemed that such an effluent would be satisfactory and could be received at the treatment works of the District without impairing our otherwise excellent operation and without complicating the operation in any way. And so the Commission granted Oscar Mayer and Company a permit to connect their sewage treatment works with the District Intercepting sewer subject, in part, to the following conditions which are also subject to change:

- (1) Maximum rate of flow -- 2 million gallons per day
- (2) 5 Day B.O.D. -- 175 p.p.m. or less
- (3) Chloroform Soluble--"Fat" -- 75 p.p.m. or less
- (4) Total Nitrogen -- 85 p.p.m. or less
- (5) Total Suspended Solids -- 100 p.p.m. or less

Equivalent to fresh domestic sewage in all other respects.

Daily analyses required the first four weeks, less frequent analyses to be made thereafter if the Commission so decides-- right of access by Madison Metropolitan Sewerage District.

The conditions set by the District and the negotiations to date have all been along the lines that the District would not tell them how to operate their plant or what appurtenances and facilities they needed to provide proper operation, but simply to indicate what we would expect in the way of results.

In spite of the fact that I was very definite in seeking information as to how the sludge be handled, the problem was not faced at the time of construction and only a small sludge tank was built along with the initial works. This tank, of course, proved to be extremely inadequate and permission to use the tanks at the Burke Works formerly used for packing house sewage and sludge was finally granted Oscar Mayer and Company by the Commission. Previous to their making use of this permission the packing plant discharged a great volume of sludge into the marsh areas surrounding the treatment works. On March 1, the tanks turned over to them at Burke were completely filled and they were in need of more sludge capacity. Oscar Mayer requested and the Commission granted use of an additional series of tanks. The attention to sludge digestion and disposal experiments was somewhat tardy but it now appears that drying of the conditioned sludge on Oliver Filters is planned and the Commissioners are advised that the Oliver Filters are ordered. Inability to get prompt delivery is responsible for this latest embarrassment to Oscar Mayer and Company in relation to sludge disposal. It is likely that inadequate attention was paid to peak loads when the Oscar Mayer treatment works was designed and the need for a waste storage tank was apparent shortly after operation of the waste treatment plant was begun. This storage tank is now being installed (with an uncontrolled peak load, — Chemical treatment is likely to be less effective and irregularities in detention periods exist thereby rendering treatment processes less efficient.) The connection to the District interceptor was made in October, and inadequate attention was paid to the operation of the plant during the early period of operation.

Conferences with city officials and with officials of the packing company there reminded Oscar Mayer and Company well in advance of the date when Nine Springs additions would be completed. Miscellaneous construction details and details in pumping station changes set the date further ahead, and still, when the east side sewage was pumped to Nine Springs, Oscar Mayer and Company's waste treatment works was not producing an effluent that was up to the standards prescribed by the Commission.

On November 5 part of the east side sewage was permitted to pass to the west side sewers and was then pumped to the Nine Springs Works for treatment along with the usual volume of sewage collected on the west side. On November 4 -- 4,970,000 gallons were pumped from Booster Station #2, November 5 -- 6,680,000 gallons, November 30 -- 7,840,000 and by December 8 the total sewage of the city was being pumped to Nine Springs and on that date 9,590,000 gallons were treated at Nine Springs. From November 5 on there was substantial evidence at Nine Springs of the presence of a strong packing house waste in the sewage. Excessive grease, a high solid content as well as a high B.O.D. were characteristics of the raw sewage received during this period, and in December when the total sewage was being received and no improvement was apparent I commented at the December Commission Meeting on the need for improvement with respect to the packing house waste.

The samples of final effluent taken at the packing house treatment works on December 9 showed a B.O.D. of 990 p.p.m., Suspended

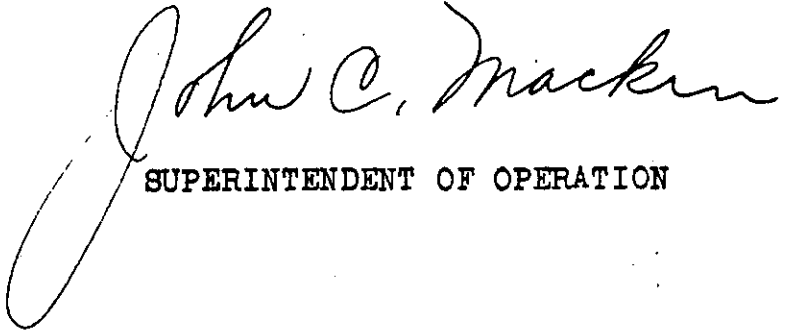
Solids of 266 p.p.m. On December 15 the B.O.D. was 815 and the Suspended Solids 406 p.p.m. On December 17 the B.O.D. was 638 and the Suspended Solids 280 p.p.m. Our attention to the problem was influential in causing the Packing Company to give definite care to the operation of their plant. On December 29 the final effluent had a B.O.D. of 335 and Suspended Solids of 114 p.p.m.; but on a composite sample taken during the most active period of packing house operation from 7:30 to 3:30 January 5, the combined wastes showed a B.O.D. of 1087 and Suspended Solids of 226 p.p.m. A catch sample taken at 3:30 on that date showed a B.O.D. of 615 and Suspended Solids 280 P.p.m. On January 8 the B.O.D. was 919 and the Suspended Solids 524. On January 12 the final effluent had a B.O.D. of 428 and Suspended Solids of 252 p.p.m. On January 19 the B.O.D. was 448 and the Suspended Solids 236. On January 21 the B.O.D. was 478 and the Suspended Solids 134. On January 22 the B.O.D. was 385 and the Suspended Solids 130. On February 1 the B.O.D. was 410 and the Suspended Solids 334. On February 3 the B.O.D. was 316 and the Suspended Solids 134. On February 4 the B.O.D. was 378 and the Suspended Solids 112. On February 14 the B.O.D. was 378 and the Suspended Solids 112. On February 19 the B.O.D. was 460 and the Suspended Solids 150. These results indicate that a substantial and necessary improvement has been made during the past two months, and the effluent as we now find it can roughly be described as having a B.O.D. of 350, and Suspended Solids are 175 p.p.m.

The February 14 sample is a Sunday Sample and was taken by me because I was interested in observing the attention we might expect would be paid to their operation on weekends. The B.O.D. of 378 determined on that sample was considerably higher than the average B.O.D. of approximately 230 as reported to us by Oscar Mayer and Co. for the week days from the 9th to 13th inclusive. The February 19th results as obtained in the Nine Springs laboratory indicate a B.O.D. of 460 does not compare favorably with the 191 B.C.D. as reported by Oscar Mayer and Company whereas they reported 161 p.p.m. suspended solids in their sample, and our laboratory determined 150. The February 1, 3 and 4 results determined at the Nine Springs laboratory compare reasonably well with the B.O.D. as determined by the Packing Company--averaging 358, and as determined in our laboratory--368. The results submitted by Oscar Mayer and Company from February 16 to 20 inclusive show the B.O.D. to average about 220 P.P.M. though the February 20th results obtained by them do not check with the results obtained on the samples which were collected by the District on Feb. 19th. The improvement that has been made in the effluent has been substantial enough so that the effect on operations at Nine Springs is favorably apparent, though the results even now obtained at the Packing Plant Treatment Works are not up to the standards originally set by the District. It may be possible for better results to be obtained when installation is made of facilities for handling and disposing of sludge and for equalizing the flow of the strong fraction to the treatment works.

It seems to me that the District should continue with its attention to the Oscar Mayer Works with occasional analyses and that

our present program of close attention to the results produced is in order. The prompt completion of the equalizing tanks and the earliest use of sludge drying equipment might be encouraged--so that when the improvements, now under way, are completed, it may be determined if the combined effluent will come up to the standards set by the Commission.

Respectfully yours,

A handwritten signature in cursive script that reads "John C. Mackin". The signature is written in dark ink and is positioned above the typed name.

SUPERINTENDENT OF OPERATION

JCM:NGA

Memorandum Regarding Sewage Treatment Facilities of
Madison Metropolitan Sewerage District
October 19, 1933.

Case 7-11311
P. H. W. S.
Commissioner
12/1/33
10 1/2
B

Madison Metropolitan Sewerage District at the present time has two sewage treatment plants, the Burke Plant completed in 1916 and located at the northerly city limits, and the Nine Springs Plant completed in 1928 and located approximately one mile southeast of the southerly city limits in the town of Blooming Grove. Each plant has a capacity of five million gallons per day.

The Burke plant is of the separate sludge digestion type and consists of five units each containing two sludge separating tanks, a sludge digestion tank and a colloidal tank. The sewage passes through the sludge separating tanks thence through the colloidal tank and thence through contact filter type dosing chambers to three sprinkling filter beds with a six foot depth of stone. After passing through the filters the effluent is collected in a shallow moat around the filters and thence conveyed through a closed conduit 13,000 feet long to the outlet of the Yahara river where it enters Lake Monona. The average load on the Burke plant is 3,082,000 g.p.d. of domestic sewage and 625,000 g.p.d. of packing plant waste.

The Nine Springs Plant is of the Imhoff tank, trickling filter and secondary sedimentation type and consists of 6 Imhoff tanks, 2 one acre trickling filters with a 10 foot depth of stone and two secondary sedimentation tanks. The effluent is conveyed through an outfall sewer and drainage ditch to a point of discharge at the Yahara river at the wide-spread above Lake Wabesa. The average daily load on this plant is approximately 4,611,000 gallons per day.

The Burke plant due to the packing plant waste is unable to produce a satisfactory effluent and the efficiency of the plant has been very

seriously impaired by the packing plant waste. Numerous complaints have been made of the effluent from the Burke plant and of alleged odors from said plant. The Commissioners of Madison Metropolitan Sewerage District have been allotted a federal loan of \$912,232 subject to certain conditions set forth in a Bond Purchase Contract submitted to the Commissioners for their acceptance, the loan to be used for the extension of the sewage disposal facilities of the District, the additional disposal works to be constructed at the Nine Springs site.

Subsequent to the application for the loan the Commissioners retained Pearse, Greeley & Hansen, consulting sanitary engineers of Chicago, Illinois, to make a study and report on the type of treatment they would recommend for the addition and to submit necessary basic design data required for the preparation of any new plans which might be needed. It was contemplated at the time of the application to use the plans from which the present five million gallon plant at Nine Springs has been constructed, said plans to be changed to provide for a 7.5 m.g.d. addition instead of for a 5 m.g.d. capacity as at the present works.

Under date of October 2, 1933, Pearse, Greeley & Hansen submitted a preliminary statement on additions to the Nine Springs sewage treatment plant. Such statement dealt with three methods of enlarging said plant: Project A comprising an enlargement similar to the existing plant and thus including additional Imhoff tanks, trickling filters and appurtenances.

Project B comprises separate settling and sludge digestion tanks with additional trickling filters and secondary sedimentation tanks for the proposed additions and Project C comprises separate settling and sludge digestion tanks with aeration tanks and appurtenances instead of trickling filters.

The construction costs were estimated at \$770,000, \$670,000 and \$630,000, respectively. It was further estimated that the total annual cost including fixed charges and operation would be for project A - \$63,900 of which operation would be \$17,700; for Project B - \$57,900 of which operation would be \$17,700 and for project C - \$59,800 of which operation would be \$22,000, the latter figure was used on the assumption the power for aeration and small motors would be generated by using sludge gas thereby eliminating the cost of electrical power for such use.

In commenting on effluent said report states "In our opinion, under the conditions expected at Madison, the effluent from an activated sludge plant will be better than the effluent from trickling filters. It will be more uniform and will contain less suspended matter and have a somewhat lower oxygen demand. Further, we favor separate sludge digestion in a plant of this size, because it is more flexible and permits closer control of sludge digestion. The activated sludge process allows somewhat more flexibility in the amount of treatment given to the sewage because this depends, to some extent, on the amount of air applied."

The report compares the projects as follows:

- a. An activated sludge plant will cost less to construct.
 - b. The activated sludge plant effluent will be somewhat better than that from trickling filters.
 - c. The odor hazard will be less with an activated sludge plant;
- and further states that the annual cost of an activated sludge plant will be somewhat higher than that of trickling filter plant and an activated sludge plant will use less ground.

The report concludes as follows:

"In view of the foregoing comments and statements, it is our opinion that, of the three projects described, Project C comprising separate settling and sludge digestion, and aeration with activated sludge is best suited to Madison conditions."

It is estimated that the operation under Project A and B will involve a saving of about \$6,000.00 in the cost of treatment and that under Project C the cost of operation will not change providing that power can be made available from sludge gas; however, when the Burke plant is abandoned and all sewage pumped to the Nine Springs plant the increase in pumping cost will be approximately \$11,000.00 so that as outlined under Projects A and B the total operating cost may increase approximately \$5,000.00 and under Project C, \$11,000.00.

It is contemplated in connection with the proposed additions that the packing plant waste will be pre-treated so that when it is discharged into the District's sewerage system its character will be similar to that of domestic sewage. The Commission has verbally discussed with the city officials the packing plant sewage problem and has advised them that it will be unable to accept that sewage in its present state to the detriment of the new sewage treatment works. The matter of securing a satisfactory method of pre-treatment is being considered by the city and Oscar Mayer & Company. Questionnaires have been sent to several packing companies in the middle west and the municipal officials where such packing plants are located in an effort to learn what progress has been made in the treatment of packing plant waste. Based on the answers to these questionnaires letters have been addressed to certain sanitary engineers inquiring as to their availability and qualifications for such work.

FINE MEATS



SINCE 1883

OSCAR MAYER & CO. · MADISON, WISCONSIN 53701 · PHONE (608) 244-1311

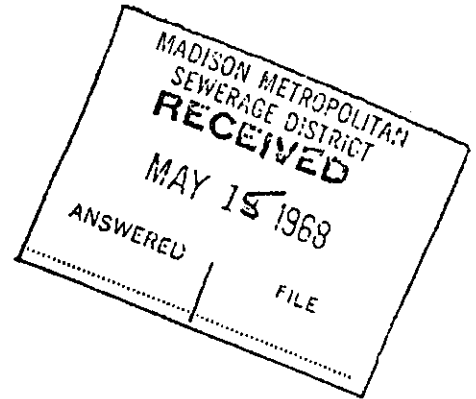
May 14, 1968

Commissioners
Madison Metropolitan Sewerage District
104 North First Street
Madison, Wisconsin 53704

Attention: Mr. W. J. Landwehr
Chief Engineer and Director

Gentlemen:

Subject: Proposed Sludge Lagoon Burke
Waste Treatment Plant

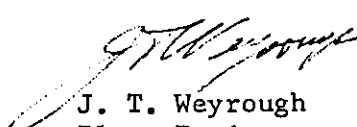


We wish to request permission to construct an additional sludge lagoon on the Burke Waste Treatment Plant property within the next twelve months. This new sludge lagoon would be located as shown on the attached sketch and will have an effective depth of six feet. Overall sludge volume of the new lagoon would be approximately 15,000 cubic yards. Additional fencing will be provided as needed to isolate the new sludge lagoon from curious children or other outside intruders.

This new sludge lagoon is needed to replace existing sludge lagoons #1 and #2 on property now controlled by the City of Madison. These two sludge lagoons were constructed under U.S. Air Force approval, but since this land has been taken over by the City, our continued use is unlikely.

Your early consideration of our request will be appreciated.

Very truly yours,


J. T. Weyrough
Plant Engineer

JTW:ejk
Enclosure

cc: D. O. Dencker
T. D. Lisi

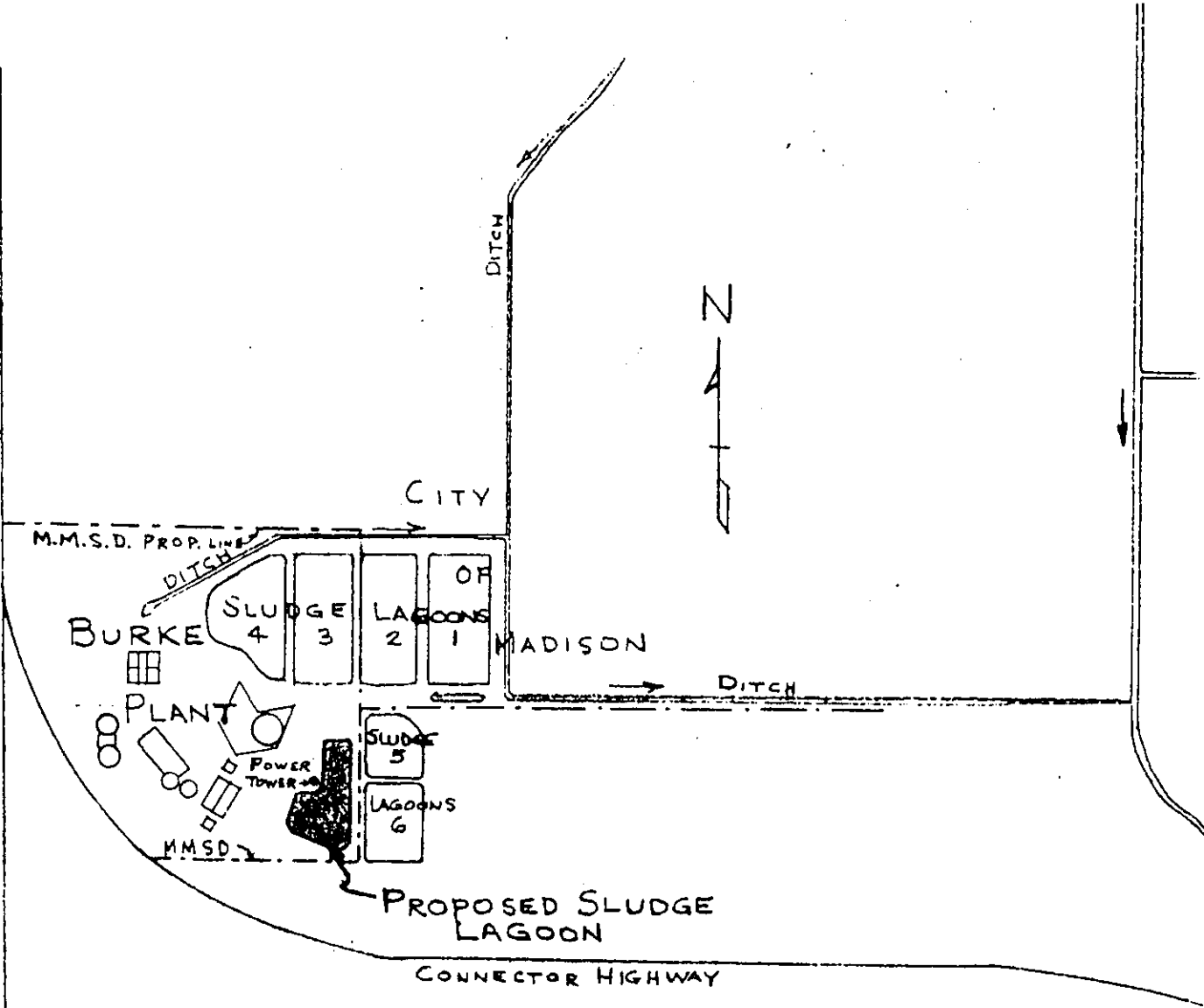
Appendix H

Selected Copies from the MMSD's Files

PROJ. NO. 4-131-M

PRG. NO. A-1075

HIGHWAY 113



PROPOSED 1968 SLUDGE LAGOON
BURKE WASTE TREATMENT PLANT

OSCAR MAYER & CO.
GENERAL PLANNING
& ENGINEERING DIV.
MADISON, WISCONSIN

SCALE NONE	DRAWN BY DOD	CHK'D BY	PROJ. NO. 4-131-M
SHEET 1 OF 1	DATE 5-2-68	APP'D BY	PRG. NO. A-1075

BURKE SEWERAGE TREATMENT PLANT

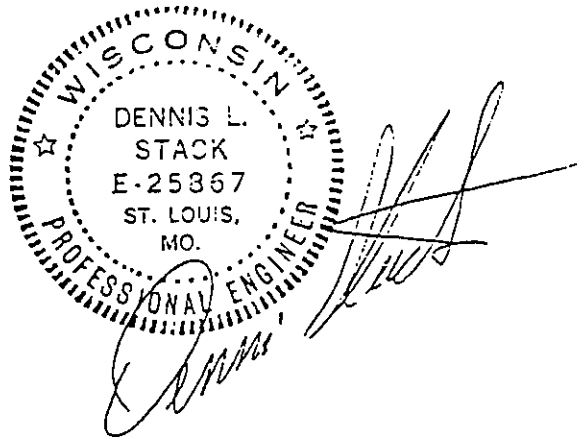
<u>YEAR</u>	<u>OPERATOR</u>	<u>FLOW DATA</u>
1914-1920	City of Madison	5,000,000 gallons per day
1921	City of Madison	5,715,600 gallons per day
1922	City of Madison	6,196,000 gallons per day
1923	City of Madison	5,908,000 gallons per day
1924	City of Madison	>5,000,000 gallons per day
1928-1933	City of Madison	1/2 of City's sewage was treated at Burke, 1/2 was treated at Nine Springs (Each plant had a capacity of 5,000,000 gallons per day.)
1933	City of Madison/MMSD	Avg. 3,082,000 gallons per day of domestic sewage and 625,000 gallons per day of packing plant waste
1933-1936	MMSD	No flow data
1937-June 1942	Not Used	N/A
June/Oct.1942	MMSD for DOD	48,932,306 gallons for the June-Oct. period
Oct.1942-May 1946	DOD	No flow data
May 1946-Dec.1947	MMSD (?)	???
Dec.1947-48	MMSD	869,065,000 gallons for the period
1949	MMSD	870,565,000 gallons for the year
May 1950-July 1952	Oscar Mayer (MMSD owns)	Experimental treatment of packing plant waste; irrigation studies begun on a small scale; no specific quantities available
July 1952	Oscar Mayer	Plant placed in full operation; no specific quantities available

1953-1956	Oscar Mayer	Irrigation of 50 acre field; no specific amounts available; report on initial studies not yet located (Studies were done in conjunction with UW Soils Dept.)
1956	Oscar Mayer	Sludge lagoons 1-4 constructed; 1&2 constructed on Air Force controlled land.
1957-1958	Oscar Mayer	Large scale irrigation; 121,000,000 gals. in 1957 and 143,000,000 gals. in 1958; sludge lagoons 5 & 6 constructed; irrigation plots constructed on Air Force controlled land; South Irrigation Field land owned by Oscar Mayer
1959-1962	Oscar Mayer	Irrigation studies continue; mosquito control studies conducted; 71.3 million gals. irrigated in 1959, 50.5 million gals. in 1960, 48.5 million gals in 1961, 80.2 million gals. in 1962.
1963-1967	Oscar Mayer	No flow data available
1968	Oscar Mayer	Sludge lagoon 7 constructed; 75.46 million gals. of secondary effluent irrigated
1969	Oscar Mayer	Avg. flow of 93,000,000 gals. per month
1970	Oscar Mayer	Avg. flow of 98,000,000 gals. per month
1971-1979	Oscar Mayer	No flow data available.
June 1979- Sept. 1981	MMSD	Not operated
Sept. 1981	Reynolds Transfer	Purchased from MMSD
Dec. 1981	Edward S. and David R. Reynolds	Quit-claimed from Reynolds Transfer
Jan. 1982	Shopko Stores, Inc.	A portion of the South Irrigation Field was sold to Shopko by Oscar Mayer
Sept. 1984	Reyco Madison, Inc.	Edward S. and David R. Reynolds quit-claimed ownership of the former MMSD property to Reyco Madison, Inc.

C

This Engineering Report for the Contamination Evaluation at Truax Field, Madison, Wisconsin has been prepared to make a preliminary determination of the presence or absence of chemical contamination which may have been caused by DOD-related activities. Engineering aspects of this Report have been reviewed and approved by the undersigned Registered Professional Engineer.

Dennis Stack
Wisconsin Registration Number E-25867
(Issued September 1988)



1.0 EXECUTIVE SUMMARY

A contamination evaluation was performed at Truax Field in Madison, Wisconsin. The site is currently owned by several entities, including the Dane County Airport Commission, Madison Housing Authority, State of Wisconsin, Madison Area Technical College, and numerous private companies. The contamination evaluation included a records review and visual site inspection; installation of three groundwater monitoring wells; collection of groundwater samples from ten new or previously-existing monitoring wells and water supply wells; collection of soil samples at twelve locations; and collection of surface water samples at four locations. Samples from each site were analyzed for petroleum hydrocarbons, volatile organics, and total metals (including arsenic, selenium, silver, mercury, barium, cadmium, chromium, and lead). In addition, groundwater samples were analyzed for total iron, manganese, and sodium.

During the records review and site inspection, a site map was developed and the locations and uses of the former DOD facilities were identified. Four areas were identified as potential sources of soil, surface water, and/or groundwater contamination. The potential sources included a practice burn pit, landfill, wastewater treatment plant, and JP-4 fuel storage area.

The fireman training area practice burn pit was probably created in the early 1950s by the DOD and was in use by DOD and numerous other organizations until December 1987. The DOD excavated a sand and gravel pit in the 1930s or 1940s and may have disposed of some wastes in this area, which was used by Oscar Mayer as an open burning pit until 1953 and then as a landfill until 1972 by the City of Madison. Numerous parties disposed of wastes in the landfill. The DOD operated the former Burke Wastewater Treatment Plant during the period 1942-1946. Numerous other parties operated the treatment plant before and after the DOD's ownership. The JP-4 fuel area, including four large above-ground fuel tanks, was constructed by the DOD. It has since been used by the Air National Guard and ownership has been transferred to Dane County. The tanks were empty at the time of the site inspection.

Sampling and analysis at each of the areas described above was performed in accordance with the Plan approved by the Corps of Engineers. Sampling sites were chosen to represent areas where chemical contamination would be most likely to occur.

Results of the sampling and analysis programs are presented in the following sections.

1.1 GROUNDWATER

Samples were collected from three newly installed groundwater monitoring wells, four previously existing monitoring wells, and three deep supply wells. These wells were downgradient of the landfill, former wastewater treatment plant, and practice burn pit. Analysis of samples indicated that standards, including Maximum Contaminant Levels (MCLs) or Maximum Contaminant Level Goals (MCLGs), were exceeded for one or more parameters in eight of the ten wells. Contamination was present downgradient of each of the three sources identified. Contaminants for which MCLs and/or MCLGs were exceeded

included chromium, cadmium, mercury, lead, trichloroethylene, vinyl chloride, and xylène. Groundwater samples which exceeded MCLs and/or MCLGs are summarized in Table 1-1. It should be noted that elevated metals levels in groundwater samples may be due to presence of turbidity in the water samples and reflects the presence of these metals in background soils rather than dissolved metals in groundwater.

Groundwater near the practice burn pit (Site TG-3) was found to contain numerous organic chemicals present in fuels or solvents, and elevated levels of petroleum hydrocarbons. During installation of TG-3, cuttings from a depth of 24 feet exhibited elevated organic vapor meter readings and the odor of petroleum was noted. During well development and sampling, water in the well exhibited a strong solvent odor.

A relatively shallow monitoring well (TG-2) installed downgradient of the former treatment plant had concentrations of chromium, lead, and cadmium in excess of MCLs and/or MCLGs.

Monitoring wells downgradient of the landfill (TG-1, TG-5, TG-9, TG-10, and TG-11) contained a variety of metals, petroleum hydrocarbons, volatile organics, and chlorinated compounds. Trichloroethylene was found in the two deep Oscar Mayer water supply wells (TG-13 and TG-14) sampled. The City of Madison's water supply well (TG-12) was found to be free of contamination.

1.2 SURFACE WATER

Surface water samples were collected at four locations. A sample of standing water in a ditch near the practice burn pit (TW-3) was found to contain organics present in fuels or solvents (including methylene chloride, benzene, toluene, 1,2-transdichloroethylene, thiobismethane, and tetrachloroethylene). Petroleum hydrocarbons and lead were also found in TW-3. These analytical results further confirmed groundwater and soils analyses which are evidence of contamination related to the practice burn pit.

No contaminants were found in the surface water sample (TW-1) collected from the creek near the practice burn pit.

No contaminants were found in a surface water sample (TW-2) collected in one of the lagoons at the former treatment plant.

A sample was obtained from the culvert which discharges water from the former wastewater treatment plant lagoons to a ditch connected to Starkweather Creek. This sample contained elevated levels of petroleum hydrocarbons (65 mg/l) and a trace of tetrachloroethylene.

1.3 SOILS

Soil samples were collected at twelve locations believed to have the highest potential for contamination. Contaminants were detected at most of the sites. At the burn pit area (soil samples TS-1 and TS-2), elevated levels of petroleum hydrocarbons and detection of numerous organic chemicals confirmed surface contamination related to burning of fuels and solvents. Soil within the diked area at the JP-4 fuel area (samples TS-3 and TS-4) was found to

TABLE 1-1

SUMMARY OF CONTAMINANTS PRESENT IN GROUNDWATER
IN EXCESS OF MCLS AND MCLGS

Well Designation	Site Description	Level of Contaminants, (MCLG/MCL), ug/l						
		Chromium (120*/50)	Cadmium (5*/10)	Mercury (3*/2)	Lead (20*/50)	TCE ^a (0/5)	Vinyl Chloride (0/2)	Xylene (440*/-)
TG-1	Downgradient of landfill				30			
TG-2	Downgradient of WWTP	94	7		124			
TG-3	Near Burn Pit				24			705
TG-5	Well 200S Downgradient of landfill							
TG-9	Well 152 Downgradient of landfill	302	12		333			
TG-10	Well 104 Downgradient of landfill	178	5		157	3.9		
TG-11	Well 101 Downgradient of landfill			2	62		16.7	
TG-12	Madison Well No. 7							
TG-13	Oscar Mayer Well No. 3					11.0		
TG-14	Oscar Mayer Well No. 5					2.2		

* = Proposed

a = TCE = Trichloroethylene

MCLG = Maximum Contaminant Level Goal

MCL = Maximum Contaminant Level

Blank entries indicate MCLs and/or MCLGs were not exceeded

contain elevated levels of petroleum hydrocarbons, lead, and organic chemicals potentially related to leaks or spills from the fuel tanks. Presence of lead may have been due to lead-based paints possibly used in and around the tank farm. A soil sample (TS-5) collected at the drum and container storage area near the JP-4 fuel tanks showed elevated levels of petroleum hydrocarbons, lead, and organics. Three samples collected from sludge drying bed cells (TS-7, TS-8, and TS-9) were found to contain varying levels of organic chemicals and indicated that solvents may have been present in sludges disposed at the former Burke Wastewater Treatment Plant. Sediment samples collected from a lagoon (TS-11) and from near the outfall from the former wastewater plant to a ditch connected to Starkweather Creek (TS-12) showed presence of petroleum hydrocarbons and organic chemicals. Analytical interferences present in samples TS-8, TS-9, TS-11 and TS-12 inhibited identification and quantification of the organic chemicals believed to be present.

1.4 HAZARDOUS RANKING SYSTEM (HRS) SCORE

The Hazardous Ranking System Score for the site (for toxic materials) is 35.59. The score results primarily from detection of trichloroethylene in deep supply wells, and petroleum hydrocarbons in surface water near the former wastewater treatment plant. The form is presented in its entirety in Appendix J.

2.3.2 Physiography

Truax Field lies on relatively flat ground, with elevations ranging from approximately 860 feet AMSL at the south end to approximately 900 AMSL at the north end. However, just north of the study area lies an area of approximately 120 feet of relief. The differences in elevation are due to the remnants of a glacial moraine. The physiography of the area includes glacial deposits of fine gravel, sand, silt and clay of Pleistocene age. Regionally, the thicknesses of these deposits vary with the depth of bedrock. The local stratigraphy consists of sandy or clayey silt for the first 5 to 15 feet followed by silty sand or fine to medium-grained sands down to the top of the water table which lies between twenty-five and thirty feet. Depth to bedrock varies throughout the site.

As seen from data in this report, depth to the uppermost groundwater aquifers at Wells TG-1, TG-2 and TG-3 was between 25 and 30 feet. These depths are believed to vary seasonally. Water levels were also measured in the deeper monitoring wells installed by Kaufmann. [7]

Prior to the presence of Oscar Mayer, the groundwater in the study area is believed to have flowed south or southwest towards what is now the landfill. The landfill is lying on a Pleistocene Age glacial lake bed which was at one time a large marsh. The areas surrounding the marsh were areas of recharge which flowed towards the marsh. Oscar Mayer now pumps several million gallons of groundwater per day. This is believed to have caused a cone of depression in the vicinity of the water supply wells which lie southwest of Truax Field. Although the wells of Oscar Mayer are relatively deep, it is felt that they are creating a drawdown on the upper aquifer. The upper aquifer appears to recharge the lower aquifer through percolation, fractures and faults. Therefore groundwater flow beneath the Truax Field is probably towards the south or southwest with the exception of the WWTP area. Groundwater flow in the wastewater treatment plant area is believed to be towards the west. The WWTP lies on a clay barrier between 30 and 120 feet thick which blocks the effects of the cone of depression created by the Oscar Mayer groundwater wells.

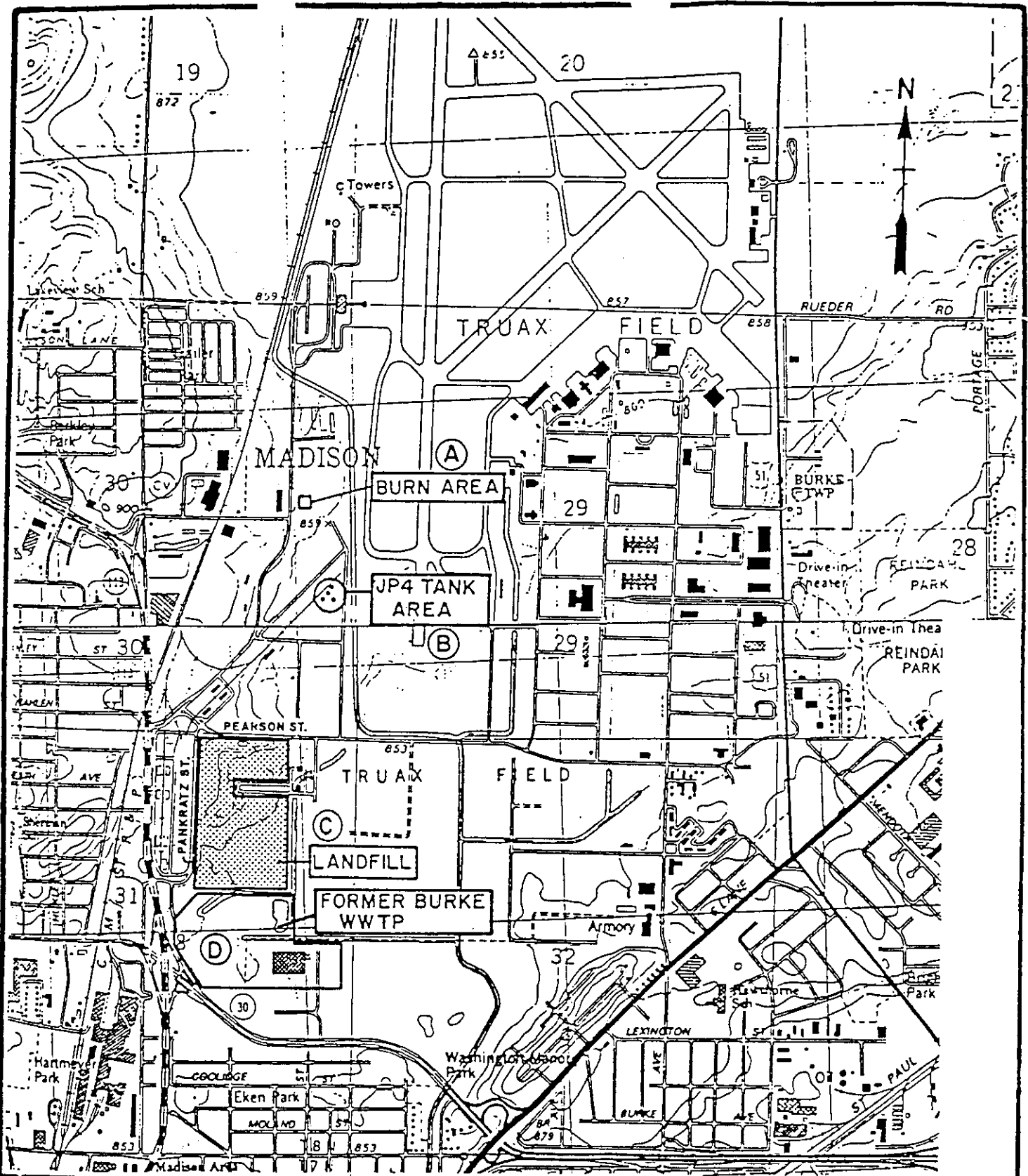
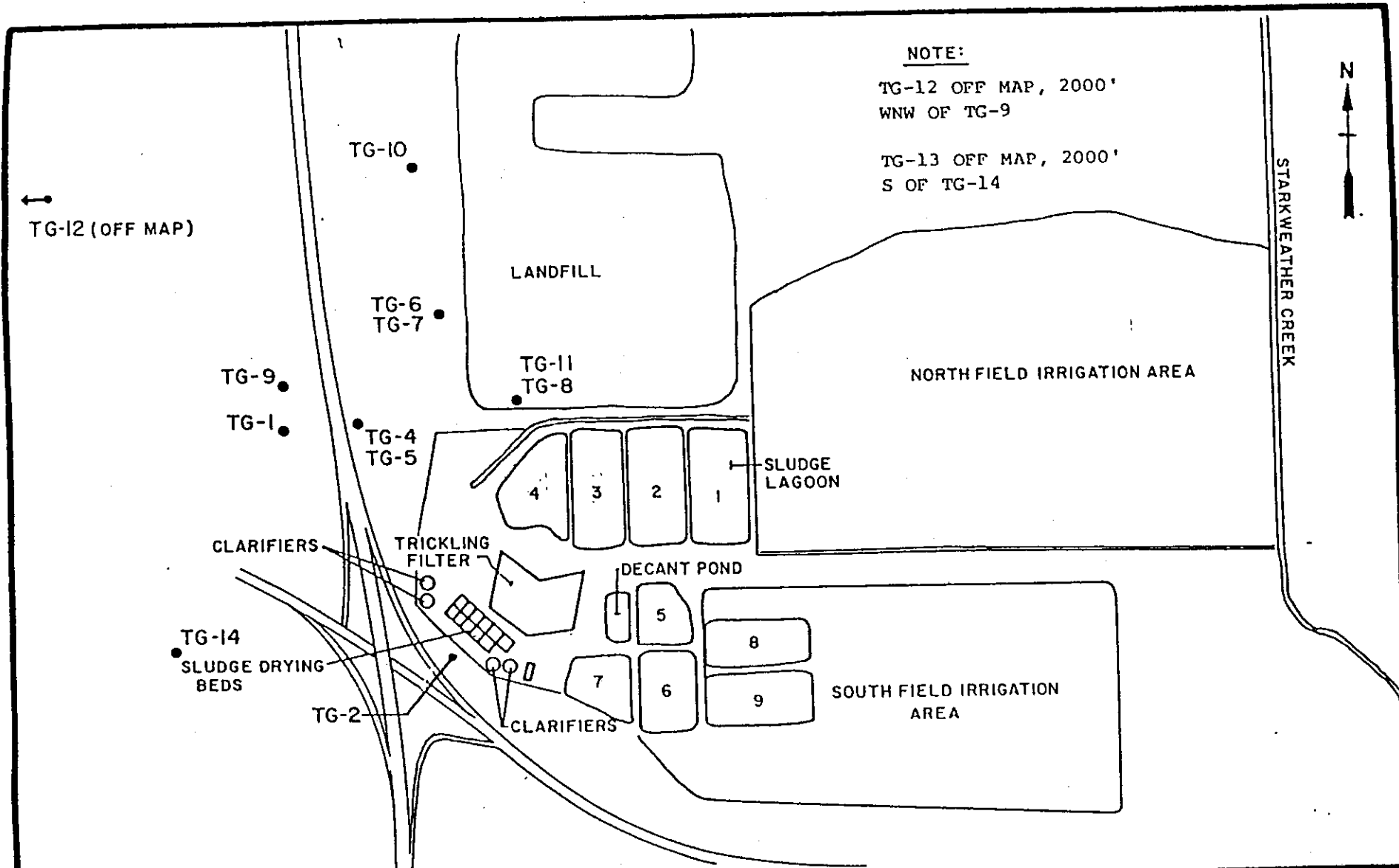


FIGURE 3-1

Potential Sources of Contamination Truax Field
Madison, Wisconsin





NOTE:

TG-12 OFF MAP, 2000'
WNW OF TG-9

TG-13 OFF MAP, 2000'
S OF TG-14



STARKWEATHER CREEK

TG-12 (OFF MAP)

TG-10

LANDFILL

TG-6
TG-7

TG-9

TG-11
TG-8

NORTH FIELD IRRIGATION AREA

TG-1

TG-4
TG-5

SLUDGE LAGOON

CLARIFIERS

TRICKLING FILTER

DECANT POND

TG-14
SLUDGE DRYING BEDS

TG-2

CLARIFIERS

SOUTH FIELD IRRIGATION AREA

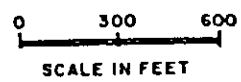


FIGURE 3-2

Location of Groundwater Wells

3-6

TABLE 4-5

FINAL MCLGs AND MCLs AND STATE OF WISCONSIN
 DRINKING WATER STANDARDS FOR ORGANIC CHEMICALS AND COMPARISON
 WITH MAXIMUM CONCENTRATIONS DETECTED IN GROUNDWATER

<u>Compound</u>	<u>Final MCLG (ug/l)</u>	<u>Final MCL (ug/l)</u>	<u>State of Wisconsin^(a) Standards (ug/l)</u>	<u>Highest Observation (ug/l)</u>	<u>Sample</u>
Benzene	0	5	5	Not Detected	
Vinyl Chloride	0	2	2	16.7	TG-11
Carbon Tetrachloride	0	5	5	Not Detected	
1,2-Dichloroethane	0	5	5	Not Detected	
Trichloroethylene	0	5	5	11.0	TG-13
1,1-Dichloroethylene	7	7	7	Not Detected	
1,1,1-Trichloroethane	200	200	200	Not Detected	
p-Dichlorobenzene	75	75	75	Not Detected	
Toluene	-	-	343	452.4	TG-16
Ethylbenzene	-	-	1,360	33.4	TG-16
Xylene	-	-	620	705 ^b	TG-3, TG-16
Tetrachloroethylene	-	-	20	8.8	TG-14

NOTES: (a) Current Wisconsin Drinking Water Health Advisory Standards [14]

(b) Two isomers of xylene were found in TG-3 and its blind duplicate TG-13.

The concentration reported is the total concentration of the two isomers.

TABLE 4-6

COMPARISON OF MAXIMUM GROUNDWATER CONCENTRATIONS
WITH STANDARDS FOR INORGANIC CHEMICALS

<u>Parameter</u>	<u>Proposed MCLG (ug/l)</u>	<u>Promulgated^(a) MCLs (ug/l)</u>	<u>Highest Observation (ug/l)</u>	<u>Well Designation</u>
Arsenic	50	50	12.9	TG-10
Barium	1,500	1,000	793	TG-2
Cadmium	5	10	12	TG-9
Chromium	120	50	302	TG-9 ^b
Lead	20	50	333	TG-9 ^c
Mercury	3	2	2.0	TG-11
Selenium	45	10	<2	All
Silver	-	50	4.62	TG-9

NOTES:

^aState of Wisconsin Community Drinking Water Standards identical. [14]

^bSamples TG-2, TG-10 and TG-16 also exceeded 50 ug/l.

^cSamples TG-2, TG-10, TG-11 and TG-16 were also greater than 50 ug/l.

TABLE 4-7

ADDITIONAL PROPOSED MCLGs FOR VOLATILE ORGANIC CHEMICALS
AND COMPARISON WITH MAXIMUM CONCENTRATIONS DETECTED IN GROUNDWATER

<u>Parameter</u>	<u>Proposed MCLG (mg/l)</u>	<u>Maximum Groundwater Concentration Observed</u>	<u>Well</u>	<u>Parameter</u>	<u>Proposed MCLG (mg/l)</u>	<u>Maximum Groundwater Concentration Observed</u>	<u>Well</u>
Acrylamide	0	-		Ethylbenzene	0.68	0.0334	TG-10
Alachlor	0	-		Heptachlor	0	-	
Aldicarb,		-		Heptachlor Epoxide	0	-	
Aldicarb sulfoxide,				Lindane	0.0002	-	
Aldicarb sulfone	0.009			Methoxychlor	0.34	-	
Carbofuran	0.036	-		Monochlorobenzene	0.06	0.0012	TG-10
Chlordane	0	-		Pentachlorophenol	0.22	-	
cis-1,2-Dichloroethylene	0.07	-		Styrene	0.14	-	
DBCP	0	-		Toluene	2.0	0.4524	TG-16
1,2-Dichloropropane	0.006	-		2,4,5-TP	0.052	-	
o-Dichlorobenzene	0.62	-		Toxaphene	0	-	
2,4-D	0.07	-		trans-1,2-Dichloroethylene	0.07	0.0276	TG-10
EDB	0	-		Xylene	0.44	0.501	TG-16
Epichlorohydrin	0	-					

Notes:

TG-3 and TG-16 are field duplicates.

5.0 SUMMARY AND CONCLUSIONS

5.1 SUMMARY

As a result of the records review and visual site inspection, several potential sources of environmental contamination were identified at Truax Field, Madison, Wisconsin. These include a practice fire-fighting burn pit, a former open burning grounds and landfill, the former Burke Wastewater Treatment Plant, and the JP-4 fuel storage area. The Department of Defense has formerly owned and has partial responsibility for contamination at each area. However, current and other former owners share responsibility for the contamination.

Sampling and analysis was performed to determine concentrations of total metals, petroleum hydrocarbons, and volatile organics in soil, surface and groundwater. Sampling locations are summarized as follows:

5.1.1 Soil Samples

Soil samples were collected at twelve locations, to evaluate potential contamination at the practice burn pit, near JP-4 fuel tanks, at an outdoor drum storage area, in three sludge drying bed cells, in sediments of the former treatment plant lagoon and its outfall to a ditch, and to define background levels.

5.1.2 Surface Water Samples

Surface water samples were collected in four locations. These included standing water and a creek east of the practice burn pit, water in a lagoon at the former Burke Wastewater Treatment Plant, and at the outfall of the treatment plant to a surface ditch connected to Starkweather Creek.

5.1.1 Groundwater

Three groundwater monitoring wells downgradient of the burn pit, wastewater treatment plant, and landfill were installed by EEI, and samples from these were collected and analyzed. Four previously existing monitoring wells downgradient of the landfill were also sampled. Two water supply wells owned by Oscar Mayer downgradient of the landfill and former Burke Treatment Plant were also sampled. A sample of water from the City of Madison water supply well located about one mile away was collected to determine if contamination at Truax Field has affected municipal water supplies. A sample of water used in well installation was collected to assess whether this source was a source of any contaminants.

5.2 CONCLUSIONS

5.2.1 Contamination at the Fire-Training Burn Pit

The practice burn pit had relatively large dimensions (approximately 200 feet by 100 feet). The soil was contaminated with petroleum hydrocarbons and solvents. A surface water sample collected within the burn pit contained

elevated levels of some metals (lead and arsenic), petroleum hydrocarbons, and volatile organics. No contaminants were found in surface water (a creek) east of the burn pit. A monitoring well was installed near the burn pit. Groundwater collected from this well contained methylene chloride, xylene isomers, benzene derivatives, cyclohexane, and unknown organics. The results indicate fuels, solvents, or other chemicals used during fireman training exercises have entered the groundwater. The DOD was partially responsible for this contamination. The Air National Guard, City of Madison, Dane County, and volunteer fire departments were also partially responsible. Fire training exercises took place at frequent intervals at the site from 1953 through 1987.

5.2.2 JP-4 Fuel Area

Four large fuel tanks at the JP-4 fuel area were emptied by the Air National Guard in about 1982. Possible evidence of past spills of fuels or solvents was found in soil and sediment samples within the diked disposal area, including elevated levels of petroleum hydrocarbons and lead and presence of organic solvents.

A small fuel tank (estimated 500 gallons) could not be accessed to determine its contents, but was believed to be empty.

5.2.3 Outdoor Drum Storage Area

Five 55-gallon drums and two 5-gallon containers were found stored out-of-doors near the diked JP-4 fuel area. Contents were not sampled, in accordance with direction from the Corps of Engineers. Markings on these containers indicated they may have contained naptha, solvent, waste oil, waste fuel, and unknown chemicals. Most of the containers were at least partially full of liquid; one was empty. Markings indicated one of the containers may have originated in about 1982 (when ownership of the property was transferred from the Air National Guard to Dane County). It is unlikely that the drums are former DOD property.

5.2.4 Previously Existing Groundwater Monitoring Network

Samples could not be collected from several wells scheduled for sampling under the Scope of Work. These wells were located downgradient of the land-fill. Well TG-4 (Kaufmann's Well 200D) could not be sampled due to a non-functioning bladder pump. Wells TG-6 (121A) and TG-7 (121D) could not be accessed due to their very narrow diameters and well sections out of alignment. Well TG-8 was not found and was believed to have been destroyed during excavations at the site.

5.2.5 Former Burke Wastewater Treatment Plant Area

The former Burke WWTP consisted of a trickling filter, sludge lagoons, sludge drying beds and irrigation fields. Portions of the property are currently owned by Reynolds Brothers, Shop-Ko, and Oscar Mayer. At the time of EEI's work on-site, the trickling filter was being demolished, above ground tanks were being removed, and lagoons were being filled with soil.

No contaminants were found in a surface water sample (TW-2) collected in one of the lagoons at the former WWTP.

A sediment sample (TS-12) collected at a former decantation pond at the former WWTP was found to contain petroleum hydrocarbon (4200 ug/g), and organic solvents (including methylene chloride, 1,1,1-trichloroethane, trichlorofluoromethane, and toluene). Matrix effects interfered with analysis of sample TS-12, making identification of the organics detected tentative and quantification uncertain.

A sediment sample (TS-11) collected from beneath the surface water discharge point to the ditch which connects with Starkweather Creek was also found to contain petroleum hydrocarbons (5500 ug/g), methylene chloride, toluene, and 1,1,1-trichloroethane, as well as ethylbenzene, unidentified organics, and elevated levels of mercury and lead. Matrix effects also interfered with organic analysis of Sample TS-11.

The surface water discharge (TW-4) from the former Burke lagoons to the ditch connected to Starkweather Creek contained a trace of tetrachloroethylene (3.2 ug/l) and relatively high levels of petroleum hydrocarbons (65 mg/l).

Three soil samples (TS-7, TS-8, and TS-9) collected at sludge drying bed cells showed the presence of methylene chloride at all sites, numerous additional organic chemicals (including toluene, 1,1,1-trichloroethane, hexane, and benzene) at TS-8 and TS-9, and numerous fluorinated organics (trichlorofluoromethane, a trichlorofluoroethane isomer and a tridecafluorohexane isomer) in TS-9. Matrix effects interfered with organic analysis of samples TS-8 and TS-9, making identification of these compounds tentative.

Contaminants detected in a groundwater well (TG-2) positioned downgradient of the former Burke WWTP included lead, chromium, and cadmium. The level of lead exceeded the MCLG and MCL. The level of cadmium exceeded the MCLG but not MCL. The levels of chromium exceeded the MCL but not MCLG. No petroleum hydrocarbons or organics were found in this well.

The contaminants found in surface soil, sediment, and water samples at the former Burke WWTP were not found in the groundwater well (TG-2) positioned downgradient of the WWTP in the surficial aquifer. This may be further evidence that a clay barrier does exist and that contaminants are migrating around the clay barrier toward the Oscar Mayer wells that are responsible for the drawdown.

5.2.6 Groundwater Contamination Downgradient of the Landfill

No organic contaminants were found in TG-1, positioned downgradient of the landfill. The level of lead (30 ug/l) exceeded the MCLG.

No organic or inorganic contamination was found in TG-5 (City Well 200S). No organic contaminants had been detected during previous sampling and analyses performed by the City of Madison at this site.

Monitoring Well TG-9 (City Well 152) was found to contain trichlorofluoromethane (9.7 ug/l), dichlorofluoromethane (9.0 ug/l), and trans-1,2-dichloroethylene (1.5 ug/l). There are no final MCLs or MCLGs for the organic compounds detected. The level of trans-1,2-dichloroethylene was much lower than

the proposed MCLG for that compound (70 ug/l). Levels of chromium (302 ug/l), cadmium (12 ug/l) and lead (333 ug/l) exceeded proposed MCLGs and promulgated MCLs. The well also contained elevated levels of petroleum hydrocarbons (85 mg/l). Compounds previously detected by the City of Madison included 1,1-dichloroethylene, fluorotrichloromethane, tetrachloroethylene, and trichloroethylene. This well had a very low yield.

Samples collected from Monitoring Well TG-10 (Well 104) contained trans 1,2-dichloroethylene (27.6 ug/l), chloroethane (9.1 ug/l), trichloroethylene (3.9 ug/l), chlorobenzene (1.2 ug/l), and chromium (178 ug/l). The level of trichloroethylene exceeded the MCLG (zero). The level of trans 1,2-dichloroethylene was less than the proposed MCLG (70 ug/l). Levels of lead (157 ug/l) and chromium (178 ug/l) exceeded proposed MCLGs and promulgated MCLs. Numerous chlorinated organics had previously been detected by the City of Madison in samples from this well, including: 1,2-dichloroethane, 1,1-dichloroethane, 1,2-dichloroethylene, 1,1-dichloroethylene, trans 1,2-dichloroethylene, tetrachloroethylene, trichloroethylene, and vinyl chloride.

Contaminants found in TG-11 (Well 101) included vinyl chloride (16.7 ug/l) and lead (62 ug/l). The concentrations measured exceeded MCLs and MCLGs.

There was a lack of continuity in the levels and identities of contaminants found at the different monitoring wells downgradient of the landfill. The specific contaminants found at individual wells vary over time. The variability in results is attributable to the large volume and variety of wastes disposed in the landfill and the differing depths of the monitoring wells, which intercept different aquifers.

5.2.7 Oscar Mayer Wells

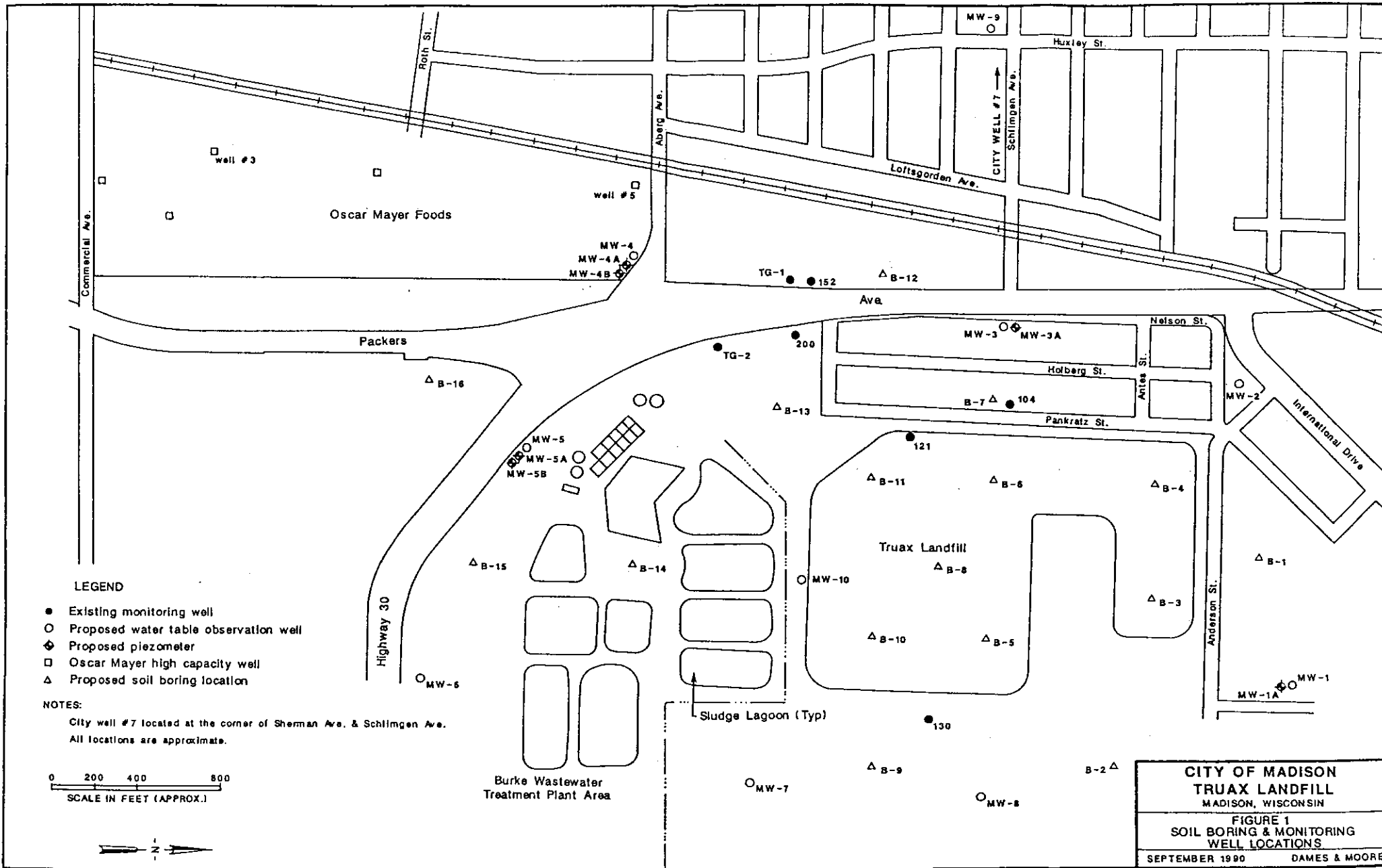
Trichloroethylene was found in TG-13 (Oscar Mayer Well No. 3) at a level (11.0 ug/l), exceeding its MCL (5.0 ug/l) and MCLG (zero). These results confirmed previous analyses performed by the Wisconsin DNR. Trichlorofluoromethane was also detected (10.0 ug/l) but had not been previously found by Wisconsin DNR.

Trichloroethylene was found in TG-14 (Oscar Mayer Well No. 5) at 2.2 ug/l. This level exceeds the MCLG (zero) but not the MCL (5.0 ug/l). Tetrachloroethylene was also found in TG-14 (8.8 ug/l). There are no MCLs or MCLGs for tetrachloroethylene but the level was less than the State of Wisconsin Drinking Water Health Advisory (20 ug/l). Presence of trichloroethylene and tetrachloroethylene confirms results of sampling and analysis performed previously by Wisconsin DNR.

No metals contamination was found in Oscar Mayer wells.

5.2.8 Madison Water Supply Well No. 7

No evidence of organic or inorganic contamination was found in TG-12, the sample collected from the Madison Water Supply Well.



LEGEND

- Existing monitoring well
- Proposed water table observation well
- ◆ Proposed piezometer
- Oscar Mayer high capacity well
- △ Proposed soil boring location

NOTES:

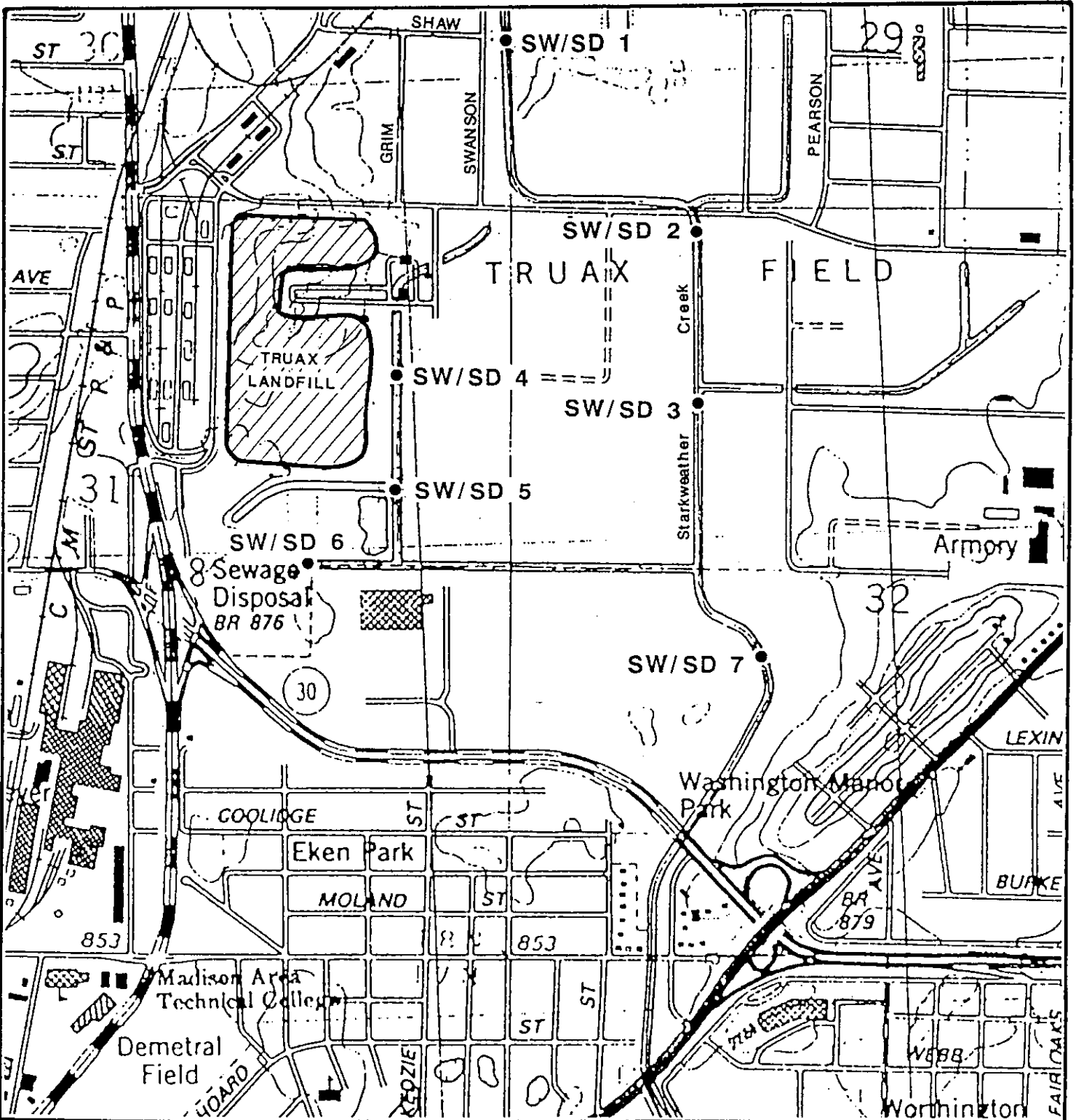
City well #7 located at the corner of Sherman Ave. & Schlimgen Ave.
 All locations are approximate.



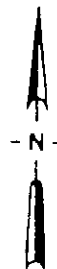
CITY OF MADISON
TRUAX LANDFILL
 MADISON, WISCONSIN

FIGURE 1
SOIL BORING & MONITORING
WELL LOCATIONS

SEPTEMBER 1990 DAMES & MOORE



BASE MAP REFERENCE: U.S.G.S 7.5 minute topographic quadrangle map, Madison East, Wisconsin, 1983.



<p>CITY OF MADISON TRUAX LANDFILL MADISON, WISCONSIN</p>
<p>FIGURE 2 SURFACE WATER/ SEDIMENT SAMPLING LOCATIONS</p>
<p>SEPT 1990 DAMES & MOORE</p>

Bill WTP

ONE EAST MAIN STREET
POST OFFICE BOX 2719
MADISON, WI 53701-2719
FACSIMILE 608-257-0609
TELEPHONE 608-257-3911

603 WATER STREET
POST OFFICE BOX 148
SAUK CITY, WI 53583-0148
TELEPHONE 608-643-2408

113 EAST MAIN STREET
POST OFFICE BOX 191
STOUGHTON, WI 53589-0191
TELEPHONE 608-873-9464

PHILIP E. LAFOLLETTE (1892-1965)

GORDON SINYKIN
EARL H. MUNSON
CHRISTOPHER J. WILCOX
HOWARD A. SWEET
THOMAS A. HOFFNER
DAVID E. MCFARLANE
BRADY C. WILLIAMSON
ROBERT E. CHRITTON
TIMOTHY J. MULDOWNEY

MICHAEL E. SKINDRUD
TERESA M. ELGUÉZABAL
LINDA M. CLIFFORD
LAWRENCE BENSKY
MARGARET J. VERGERONT
JONATHAN C. AKED
BRETT A. THOMPSON
RICHARD M. BURNHAM
ROBERT J. DREPS
THOMAS H. TAYLOR
JEFFREY J. KASSEL

EUGENIA G. CARTER
NOREEN J. PARRETT
DAVID B. HOFF

OF COUNSEL
WILLIAM F. CHRITTON
FRANK M. TIERKHEIMER

LAW OFFICES

LaFollette
Sinykin

October 2, 1990

James L. Nemke
Chief Engineer & Director
Madison Metropolitan Sewerage District
1610 Moorland Road
Madison, WI 53713-3398

~~PERSONAL AND CONFIDENTIAL~~

RECEIVED

OCT 3 1990

Truax Landfill
~~Burke Treatment Plant~~

Dear Mr. Nemke:

My apologies for not including a copy of the PRP agreements negotiated so far between the City and County and with Oscar Mayer. I enclose them with this letter.

Referring to the first round of tests at the landfill, I enclose a copy of the "Preliminary Sampling Results, Truax Landfill Investigation." The results suggest detects and exceedances for arsenic, cadmium, and selenium concentrated at wells MW-5, MW-5A, MW-5B, and MS-6 located in the vicinity of the former sludge lagoons. This information leads to the conclusion that hazardous substances are being released from the treatment plant facility.

We appreciate your continuing interest in attending steering committee meetings, and hope to hear from you soon about the District's intention to participate financially in this effort.

Very truly yours,

LA FOLLETTE & SINYKIN

By 
Linda M. Clifford

LMC/jad
Encl.
1:jad(C-6.1)NEM

- cc: Peter A. Peshek (w/o enc.)
- James A. Voss (w/o enc.)
- Griffin G. Dorschel (w/enc.)
- Jeanie Sieling (w/o enc.)
- David P. Trainor (w/o enc.)

PRELIMINARY SAMPLING RESULTS
TRUAX LANDFILL INVESTIGATION

	MW-1	MW-1A	MW-2	MW-3	MW-3A	MW-4	MW-4A	MW-4B	MW-5	MW-5A	MW-5B	MW-6	DL
Alkalinity	268	315	280	750	310	680	370	420	220	198	310	520	mg/L
Arsenic	-	-	-	-	-	-	21	-	-	29.4	-	-	1 ug/L
Barium	-	-	-	-	-	-	-	-	-	-	-	-	0.2 mg/L
Cadmium	-	0.9	-	-	-	-	-	-	-	-	-	0.2	0.2 ug/L
C.O.D.	14	<5	21	360	210	450	200	570	940	450	85	440	mg/L
Chloride	24	20	29	260	10	260	23	175	13	-	-	105	1 mg/L
Chromium	2.5	-	1.1	1.3	2.5	2.3	-	-	-	-	-	-	1 ug/L
Color	<5	<5	15	<5	<5	15	5	20	28	18	30	50	5 C.P.U.
Copper	2.1	2	-	-	-	-	-	-	-	-	-	-	0.03 ug/L
Fluoride	0.31	0.77	-	0.26	0.38	0.33	0.3	0.35	0.63	0.27	0.23	0.61	0.1 mg/L
Hardness	325	370	580	980	420	940	440	1000	460	170	760	1380	mg/L
Iron	-	-	-	0.15	-	-	0.16	0.17	-	-	1.02	0.99	0.1 mg/L
Lead	-	-	1.2	-	-	-	1	-	-	-	-	1	1 ug/L
Manganese	0.14	0.17	0.1	0.94	-	0.22	0.1	0.2	0.59	-	0.05	1.05	0.02 mg/L
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	0.2 ug/L
Nitrogen (NO2+NO3 as N)	0.22	0.26	0.78	6.66	4.96	10.2	0.06	-	65	-	1.09	-	0.05 mg/L
Selenium	-	-	-	-	-	-	-	-	9.6	-	-	-	6 ug/L
Silver	-	-	-	-	-	-	-	-	-	-	-	-	0.5 ug/L
Solids (TDS)	310	360	380	1220	410	1180	430	940	690	200	315	1680	mg/L
Sulfate	18	26	19	20	54	80	33	110	108	0.19	17	720	2 mg/L
Surfactants	0.035	0.91	0.13	0.17	0.24	0.022	0.053	0.08	0.2	-	0.038	0.029	0.02 mg/L
Zinc	-	-	-	-	-	-	-	-	-	-	-	-	0.5 mg/L
Metals Digestion - soil													
Metals Digestion - water													
Tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	0.5 ug/L
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	0.5 ug/L
Benzene	-	2.7	-	-	-	-	-	-	-	-	-	-	1 ug/L
Ethylbenzene	-	1.6	-	-	-	-	-	-	-	-	-	-	0.5 ug/L
Toluene	-	9.2	-	-	2.1	-	1.5	-	-	-	-	0.9	0.5 ug/L
Xylenes	-	3.3	-	-	-	-	-	-	-	-	-	-	2 ug/L
Atrazine	-	-	-	-	-	-	-	-	-	-	-	-	1.5 ug/L
EPTC (Eptom)	-	-	-	-	-	-	-	-	-	-	-	-	1.3 ug/L
Symazine	-	-	-	-	-	-	-	-	-	-	-	-	2 ug/L
Carbofuran	-	-	-	-	-	-	-	-	-	-	-	-	2.2 ug/L

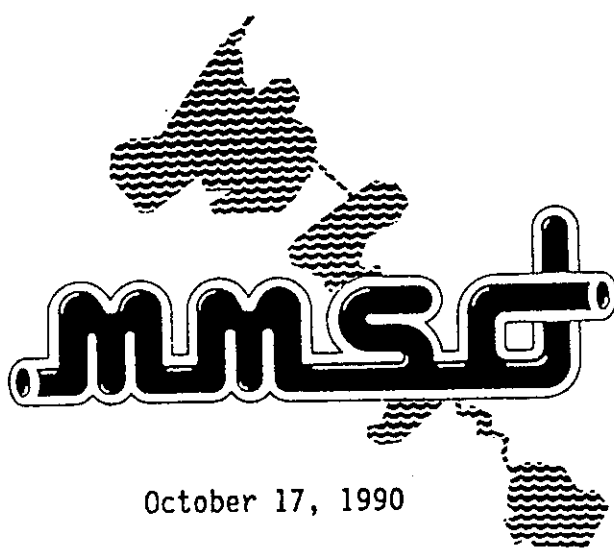
NOTE: - indicates non-detect

MADISON METROPOLITAN
SEWERAGE DISTRICT

1610 Moorland Road
Madison, WI 53713-3398

Telephone (608) 222-1201

James L. Nemke
Chief Engineer & Director



October 17, 1990

COMMISSIONERS

Lawrence B. Polkowski
President
Edward V. Schlen
Vice-President
Harold L. Lautz
Secretary
Eugene O. Gehl
Commissioner
Gordon C. Johnson
Commissioner

Ms. Linda Clifford
LaFollette & Sinykin
1 E. Main Street
Madison, WI 53703-3310

Subject: Truax Investigation

Dear Ms. Clifford:

The District feels strongly that any pollutants which might be confirmed in the Truax area are not a result of the District's operation of the Burke plant. However, we do understand the importance of ensuring all municipal agencies have a progressive attitude toward examining the problem. Based on the District's desire to cooperate with the City and the County, the Commission has authorized me to offer \$15,000.00 toward the investigative work. Please let me know to whom we should issue the check.

I will leave it up to you and our attorney, Griffin Dorschel, to draft an agreement which recognizes that any contribution toward the effort does not indicate ultimate responsibilities for further investigative work or clean-up. Once an appropriate agreement is negotiated, we will make the indicated contribution.

Sincerely,

James L. Nemke
Chief Engineer & Director

JLN/cmm



AXLEY BRYNELSON

Attorneys Since 1885

Madison

Manchester Place
2 East Mifflin Street
Post Office Box 1767
Madison, WI 53701-1767
Telephone (608) 257-5661
Facsimile (608) 257-5444

Wisconsin Dells

Richard W. Cross
Eric J. Wendorff
313 Broadway
Post Office Box 237
Wisconsin Dells, WI 53965
Telephone (608) 254-2000
Facsimile (608) 254-8582

Direct Dial:

NOV 6 1990

October 29, 1990

Mr. William T. Cormack
Wausau Insurance Companies
Suite 500
901 Warrenville Road
Lisle, IL 60532-4307

RE: City of Madison and Dane County
Madison Metropolitan
Sewerage District (Truax Landfill/Burke Plant)
Our File: 35906

Dear Mr. Cormack:

This letter responds to your October 8, 1990 correspondence and the questions posed therein:

1. Please provide a brief history of the facility and its operation including a description of the product manufactured and information on previous owners.

Response: The Burke Wastewater Treatment Plant was constructed by the City of Madison in 1914. At that time, the Burke Outfall Sewer was constructed and carried effluent from the plant to the Yahara River at East Johnson Street in Madison, Wisconsin. From there it flowed to Lake Monona. The plant contained no sludge storage lagoons. Sludge was dried on sludge drying beds which had underdrains. The underdrains collected any water drained from the sludge and discharged the water to the effluent channel for eventual discharge through the Burke Outfall. Dried sludge was used as compost or fertilizer.

The City of Madison operated the Burke Plant from 1914 to 1933, at which time the plant was deeded to the Madison Metropolitan Sewerage District (MMSD). We have no knowledge of any effluent in the plant vicinity or storage of sludge on the plant grounds during the period of operation by the city.

Ralph E. Axley
of Counsel
Floyd A. Brynolson
of Counsel
James C. Herrick
Frank J. Bucalda
Griffin G. Dorschel
Bradley D. Armstrong
John H. Schmid, Jr.
Timothy D. Fenner
John C. Milby
Daniel T. Hardy
John Walsh
Bruce L. Harms
David Easton
Peter Weisenberger
Curtis C. Swanson
Michael S. Anderson
Patricia M. Gibeault
Carl H. Creedy
Catherine J. Furay
Michael J. Westcott
Larry K. Libman
Richard E. Petershack
Richard W. Cross
Eric J. Wendorff
Steven A. Brezinski
Arthur E. Kurtz
Steven M. Streck
Edith F. Merila
Joy L. O'Grosky
Michael J. Modl
Colleen J. Reinka
Caryl J. Shortridge
Sabin S. Peterson
Terry J. Finman

AXLEY BRYNELSON

Mr. William T. Cormack
October 29, 1990
Page 2

Attorneys Since 1885

MMSD operated the Burke Plant from June 16, 1933 to December 4, 1936, at which time the plant was inactivated. During this period of operation no effluent was surfaced applied at the plant site nor was sludge stored. Sludge was de-watered on drying beds, and the water was collected and discharged to the Burke Outfall.

On April 17, 1942, the United States of America condemned the Burke Plant site. The plant was turned over to the United States by warranty deed. It was reconditioned and began operating under federal control on October 15, 1942. It was operated by the United States until some time in early 1946.

Prior to May 1, 1946, at the request of the agency in charge at Truax Field, the City of Madison operated the plant for a period of months and billed the United States and Madison Housing Agency for services rendered. On May 1, 1946, MMSD took over the operation of the plant at the request of the City of Madison. The city paid the operating expenses at the plant and charged the Madison Housing Agency and the United States. The United States ceased operation of the plant in October, 1946 and ownership reverted to MMSD on October 15, 1947. We do not know if effluent was surface discharged or that sludge was stored in on-site lagoons during the time of operation by the United States.

From October 15, 1947, to May 11, 1950, MMSD continued to use the Burke Plant to treat wastewater which could not be transported to the Nine Springs Wastewater Treatment Plant. During this period, the East Interceptor and associated pumping stations were built to provide additional transmission capacity. Effluent was discharged to the Burke Outfall and sludge was dried on drying beds. No surface discharge occurred and no sludge storage facilities existed. Effluent from the Burke Outfall was diverted from the Yahara River to the East Interceptor on May 8, 1950.

From May 11, 1950 to July 3, 1952, the Burke Treatment Plant was used by Oscar Mayer and Company for experimental pre-treatment of its discharge. On September 7, 1951, Oscar Mayer and MMSD entered into a formal agreement for the leasing of the Burke Plant. The agreement allowed Oscar Mayer to use the Burke Plant for pre-treatment of the waste water from its plant. The agreement obligated Oscar Mayer to save MMSD harmless for any and all liability for damages to person or

property arising from the operation of the facilities by Oscar Mayer. In 1961, MMSD and Oscar Mayer entered into a successor agreement containing a similar hold-harmless clause.

During the time Oscar Mayer operated the Burke facility, it built a series of sludge lagoons. Although our records are not clear as to the number of sludge lagoons built, it appears two were built on property owned by MMSD and leased to Oscar Mayer, and at least four were built on adjacent property owned by Oscar Mayer. In 1968, MMSD granted Oscar Mayer permission to build a third sludge lagoon on MMSD property but we do not know if it was ever built.

Oscar Mayer ran the Burke Plant until approximately June, 1978. The formal agreement was terminated on June 30, 1979. On February 12, 1980, MMSD offered the Burke site to the City of Madison under the conditions of the 1933 Purchase Agreement. ON August 28, 1980, the city turned down the purchase of the Burke Plant. On September 15, 1981, MMSD sold the Burke site and plant facilities to the Reynold's family.

2. Provide a description of the past and present waste disposal operations or the process operations suspected of causing the alleged pollution. This should include:

- a. Inventory of chemicals used.
- b. Volumes and methods of waste disposed both on-site and off-site.
- c. The size and type of chemical and waste storage containers or impoundments.

Response: The treatment plant was used to treat domestic wastewater while operated by the City of Madison, MMSD and the Department of Defense. It was used to treat industrial wastewater while operated by Oscar Mayer. MMSD is not aware of the use of chemicals associated with the treatment process during the period when it was operated by the City of Madison, MMSD, or the Department of Defense. All effluent was discharged to a sewer which eventually discharged into the Yahara River. Sludge processing was done on sludge drying beds which had an underdrain system designed to recycle any filtered water back to the treatment process or the effluent outfall. There are no records of any liquid or solid waste

AXLEY BRYNELSON

Attorneys Since 1885

Mr. William T. Corr
October 29, :
Page

having been placed on the ground during that period of operation.

Once the plant was leased by Oscar Mayer, sludge lagoons were constructed on-site and were eventually used to store sludge generated at the plant. The general location and size of the sludge lagoons are indicated on the attached drawing No. A-1075. The district has no records of the amounts of sludge held in the sludge lagoons.

3. Provide a history of any leaks, spills and other releases at the site or facility and the clean-up operations or remediations conducted in response to those incidents.

Response: We are not aware of any leaks, spills or other releases at the site.

4. Provide information on potential other sources of contamination both on-site and off-site.

Response: There is a significant potential for contaminants generated by the Truax landfill operated by the City of Madison located immediately northeast of the site. There is also potential contamination from various Department of Defense operations associated with the Dane County Airpark.

5. Provide any summary reports or results of comprehensive environmental studies conducted to date which outline the extent and degree of the alleged contamination of soil, air, or surface and groundwater.

Response: We attach copies of the following documents in response to this question:

- a. Hydrogeology of Solid Waste Disposal Site: Madison, a 1970 report;
- b. Truax Landfill Leachate Migration Study: May, 1984 report;
- c. Installation Restoration Program Preliminary Assessment, Headquarters 128 Tactical Fighter Wing, Wisconsin International Guard, T. Field, an August, 1988 report;

- d. A November, 1988, installation restoration program decision document;
- e. Site No. 2-JP for fuel spill No. 2;
- f. A report written by Dennis Stack analyzing DOD-related activities in the Truax Field area; and
- g. A September, 1990 draft report, interim data summary, Truax Landfill.

6. Please provide a description of use of the surrounding land both contiguous to and within a two mile radius of the facility; e.g., residential, industrial, farmland, wooded, etc.

Response: The land immediately to the northeast of the Burke Treatment Plant was used for a City of Madison landfill. Further to the north and east is the Dane County Regional Airport, with associated commercial and military terminals and industrial and office buildings. Immediately north of the Burke Site are warehouses. The Oscar Mayer Plant is immediately to the southeast of the site. Residential areas exist to the northwest and southeast of the site.

7. Describe the specific costs or damages which you under City of Madison and Dane County seek to recover from Madison Metropolitan Sewerage District.

Response: Unknown at this time.

8. Please describe any other parties against whom City of Madison and Dane County are making the same claim.

Response: Oscar Mayer is considered a potentially responsible party. The Department of Defense is also considered a PRP, as well as people who may have contributed wastes to the Truax Landfill. We do not have a listing of the contributors to the landfill.

9. Identify any parties whom you feel you and/or Wausau may have claims of indemnity against, and the basic reasons.

Response: We believe we have an indemnification claim against Oscar Mayer as provided in the lease agreements. We have attached copies of the lease agreements dated September 7, 1951 and July 1, 1961. The agreements were amended from time to time but the amendments are not germane to this matter.

10. Please provide us with the current status of settlement negotiations, if any, with City of Madison and Dane County, including specifically the amount being sought from Madison Metropolitan Sewerage District.

Response: There have been no settlement negotiations. The city and county have sought our cooperation in determining if there are any pollutants of concern associated with the Burke Site. They have asked MMSD to make contributions toward the studies currently being conducted. On October 13, 1990, the Commissioners of MMSD resolved to make a \$15,000 contribution towards the conduct of the investigative work in the vicinity of the Truax Landfill and Burke Wastewater Treatment Plant if an agreement can be worked out which will provide that the contribution in no way constitutes an admission of liability by MMSD.

11. Identify all primary and umbrella carriers and their policy periods from the time your company first operated at this site to the present. Please forward copies of the letters sent notifying them of this incident.

Response: We believe that since 1955, all primary and umbrella coverage was provided by Wausau Insurance Companies. We believe Century Indemnity Company (represented by Fox Insurance Company) provided coverage from May, 1933 through May, 1934. We believe Employers Mutual Liability Company insured MMSD from May, 1934 through May, 1941. We have no information regarding insurance coverage from May, 1941 through August, 1955.

12. Please provide copies of all environment impairment liability policies that you have.

Response: To our knowledge, MMSD has no environmental impairment liability policies. We anticipate coverage under MMSD's general liability policies.

AXLEY BRYNELSON

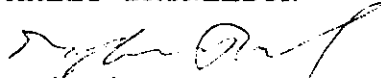
Mr. William T. Cormack
October 29, 1990
Page 7

Attorneys Since 1885

Please advise if you require any additional information.

Very truly yours,

AXLEY BRYNELSON



Griffin G. Dorschel

GGD:th

cc: James L. Nemke
Connie Nieland

COPY

Office of the City Attorney

City of
Madison



Henry A. Gempeler, City Attorney

City-County Building, Room 401
210 Martin Luther King, Jr. Boulevard
Madison, Wisconsin 53710
608 266 4511
FAX 608 266 5948

December 14, 1990

REYCO Madison Corporation
P.O. Box 628
Madison, WI 53701

Attn: Mr. David Reynolds

RE: Methane Gas Probe Site - Truax Landfill/Burke
Treatment Plan Investigation

Dear Mr. Reynolds:

Pursuant to our telephone conversation on December 13, 1990, enclosed please find a revised draft Easement for the methane gas probe to be installed on REYCO property in order to determine the extent of landfill gas migration and to monitor the success of the landfill gas extraction system now being installed. It is our intent that the revised Easement would permit REYCO or its successor to renegotiate the location of the probe in order to accommodate development of your property.

By copy of this letter to Mr. David Benzschawel, City of Madison Engineering Division, I am requesting that he contact you for the purpose of locating the proposed easement on your property and notifying you of the proposed installation which is to occur soon. Please contact me if you have any further questions regarding the proposed Easement document. If you have any other questions regarding the installation of the probe, please contact Mr. Benzschawel at 266-4091. Please have the Easement executed and acknowledged by the appropriate REYCO officers and return it to me at the above address. Thank you for your consideration. By copy of this letter, I am also advising Attorney Linda Clifford to notify you of the next meeting of the Local Steering Committee. We welcome our attendance and participation.

Very truly yours,

James M. Voss
Assistant City Attorney

JMV:sob

cc: David Benzschawel
David Trainor
Attorney Linda Clifford
Attorney Peter Peshek
James Nemke
Ron Mengel

EASEMENT AND RIGHT OF ENTRY
FOR THE INSTALLATION, MONITORING, MAINTENANCE
AND REPLACEMENT OF GAS MONITORING PROBE
(FORMER TRUAX LANDFILL SITE)

REYCO Madison Corporation, being owner of the following described property abutting the former City of Madison Truax Landfill Site located on the First Addition to Truax Air Park West, City of Madison, Dane County, Wisconsin, does hereby grant the City of Madison and County of Dane and their authorized agents, permission to enter upon the following described property in its ownership with the necessary equipment and materials for the purpose of installing, monitoring, maintaining and replacing a gas monitoring probe, as indicated on Exhibit (A) attached hereto and made a part of this Easement. The gas monitoring probe shall consist of a four inch diameter access valve box flush with the surface of the ground which is set over a twenty-five foot long one inch PVC gas probe which has been placed in a bore hole and backfilled for the purpose of monitoring any lateral movement of gas generated from the former Truax Landfill Site abutting the following described property. The area disturbed as a result of installing the probe or any alignment of the probe, as may be approved by the owner, shall be restored with top soil and leveled. Grantor, REYCO Madison Corporation, shall have the right to renegotiate the location of the probe with the city of Madison and County of Dane at any time and the grantees agree to give reasonable consideration to relocation of the said probe to accommodate development of the grantors' property.

THIS EASEMENT shall terminate without further action by either party thirty (30) days following removal of the gas probe by the City of Madison or County of Dane from the following described property:

Part of the Southwest one quarter of the northeast one quarter of Section 31, Town 8 North, Range 10 East, in the City of Madison, Dane County, Wisconsin, more fully described as follows:

A parcel of land 30 feet by 30 feet square, the center of which is 785 feet East of the North-South quarter section line of Section 31, Town 8 North, Range 10 East and 50 feet south of the North property line of Parcel No. 0810-314-0097-2, located at 1401 Packers Avenue and owned by grantor, REYCO Madison Corporation. Said point is also approximately 530 feet West of the East property line of said parcel.

Dated in Madison, Wisconsin, this ___ day of December, 1990.

REYCO MADISON CORPORATION

By: _____, President

By: _____, Secretary

ACKNOWLEDGEMENT

STATE OF WISCONSIN)
) SS
COUNTY OF DANE)

Personally came before me this ___ day of December, 1990, the above named _____ and _____, to me known to be the President and Secretary of REYCO Madison Corporation, who stated that they executed this document for and on behalf of said Corporation by its authority and acknowledged the same.

Notary Public, State of Wisconsin
My commission _____

This instrument has been drafted
by and should be returned to:

James M. Voss, Assistant City Attorney
Room 401, City-County Building
210 Martin Luther King Jr. Blvd.
Madison, Wisconsin 53710

EASEMENT TO BE ACQUIRED

DEPT. OF PUBLIC WORKS
CITY ENGINEERING DIVISION
MADISON, WISCONSIN

 DENOTES EASEMENT TO BE ACQUIRED

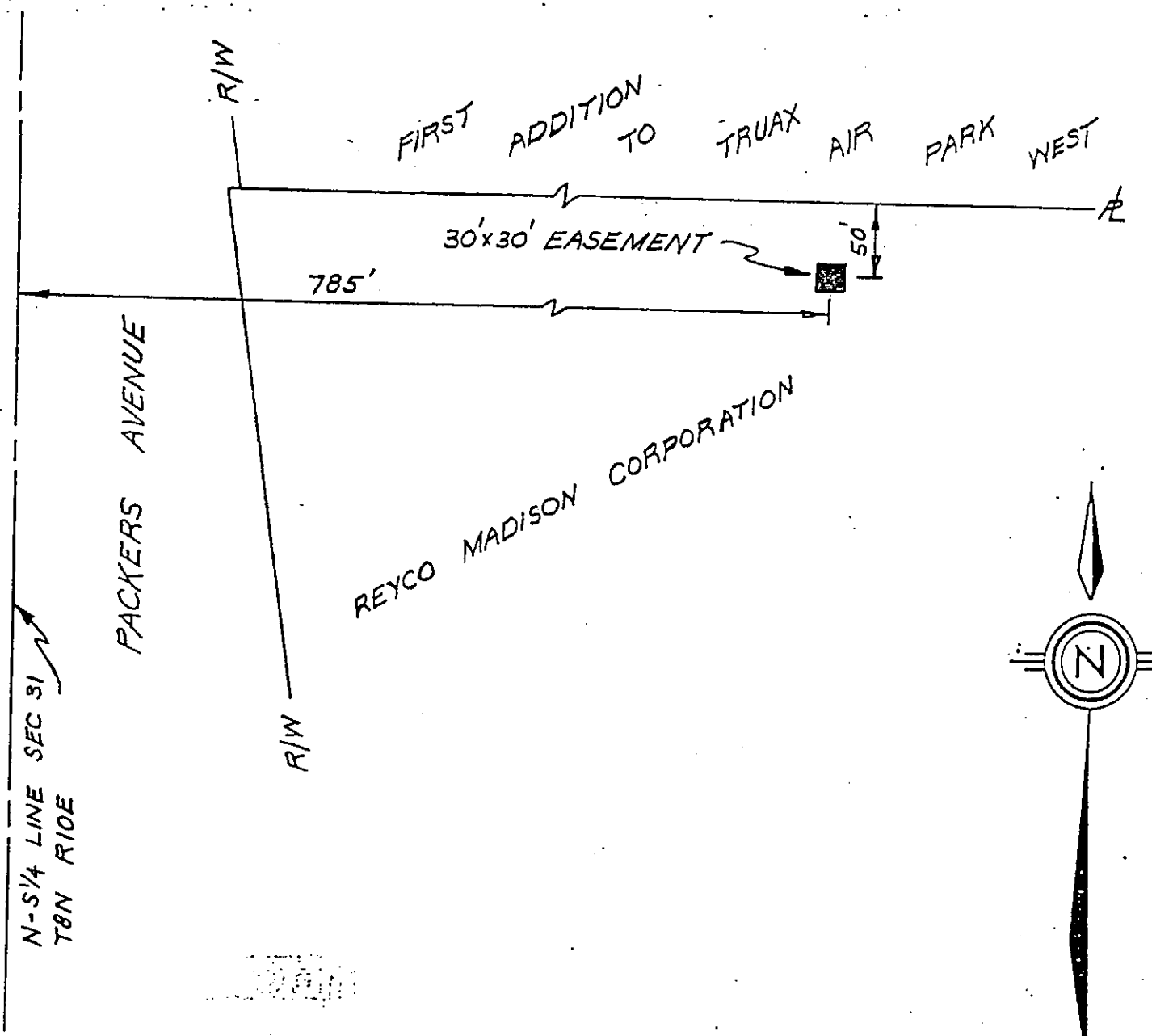


EXHIBIT "A"

DRAWN BY: MK

DATE: 12-6-90

**MADISON METROPOLITAN
SEWERAGE DISTRICT**

610 Moorland Road
Madison, WI 53713-3398

Telephone (608) 222-1201

James L. Nemke
Chief Engineer & Director



December 14, 1990

COMMISSIONERS

Lawrence B. Polkowski
President
Edward V. Schien
Vice-President
Harold L. Lauz
Secretary
Eugene O. Gehl
Commissioner
Gordon C. Johnson
Commissioner

Dames & Moore
1846 Hoffman Street, Suite 101
Madison, WI 53704-2586

Attn: Mr. David P. Trainor, P.E.
Senior Engineer

Subject: Review of Draft Report
City of Madison Truax Landfill
Dated December 1990

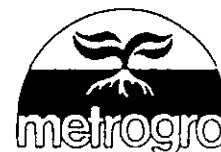
Dear Mr. Trainor:

Thank you very much for the opportunity to review your draft report. I found the report to be very comprehensive and well organized. I have several comments that you may want to consider in preparation of your final report.

On Page 7-17 you make the following statement:

"Due to the concentrations of barium, cadmium, copper, and zinc, the potential exists for those metals to leach out into the groundwater."

Although this statement is correct since there is always a potential for movement of these metals, I believe additional clarification is necessary to put that potential in perspective. While some of the concentrations you refer to are certainly above background levels for the metals in question, the concentrations themselves may not be of great concern relative to leaching into the groundwater. Most scientific evidence regarding heavy metals in a soil matrix concludes that soil pH and organic matter are critical to determining whether there is a significant potential for leaching. It has generally been found that these metals are tightly held to the soils and the potential for leaching is minimal.



To put the concentrations you discuss in perspective, the proposed Part 503 Sludge Regulations will allow application of metal-containing materials until the cadmium in the soil reaches 9 mg/kg, the copper concentration reaches 522 mg/kg, and the zinc concentration reaches 1,170 mg/kg. These numbers were developed by EPA under strict review by a highly qualified Technical Advisory Committee of national experts. It would seem unlikely that concentrations would be allowed at those levels if there was any significant concern for leaching to the groundwater.

On Page 7-32 the following statement is made:

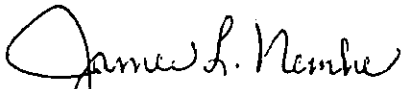
"M-10 is located between the Burke Wastewater Treatment Plant and the Truax Landfill at the point of previous discharge from the wastewater plant."

The District is unaware of any discharge that would have occurred in the vicinity of Well M-10. If you have evidence that suggests otherwise, we would like to be aware of that evidence. Are you referring to a discharge of wastewater effluent, sludge, or some other materials? If you have no specific evidence of discharge in that area, I believe your statement could be very misleading.

I have some general concern that the isoconcentration maps included as Pages 15, 16, and 17 of your plan sets are stretching the data a bit. I personally feel uncomfortable with drawing these types of concentration curves with the limited amount of data available. If you look at the significant variation in some of the data from Sampling Set 1 to Sampling Set 2, my concern is more evident.

Thanks again for the opportunity to review the report. I look forward to receiving a final copy and hope you will consider our comments positively.

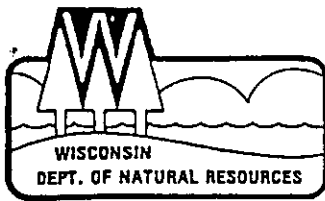
Sincerely,



James L. Nemke
Chief Engineer & Director

cc: Peter Peshek
James Voss
Dave Benzschawel
Ken Kosciak
W. Gerald Thursby
Ronald Menge
Linda Clifford
Griffin Dorsche

JLN/cmm



Carroll D. Besadny
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

101 South Webster Street
Box 7921
Madison, Wisconsin 53707
TELEPHONE 608-266-2621
TELEFAX 608-267-3579
TDD 608-267-6897

August 28, 1991

IN REPLY REFER TO: 8300

Ms. Linda Clifford
Attorney at Law
LaFollette & Sinykin
P.O. Box 2719
Madison, WI 53701

Mr. Peter Peshek
Attorney at Law
DeWitt, Porter, Huggett,
Schumacher, & Morgan, S.C.
P.O. Box 2509
Madison, WI 53701

Mr. James Voss
Assistant City Attorney
City-County Building
210 Martin Luther King, Jr. Blvd.
Madison, WI 53710

SUBJECT: Truax Landfill
Proposed Consent Order

Dear Counsel:

Enclosed is a revised draft consent order relating to the Truax Landfill. I believe that the revised draft reflects the concerns expressed in your August 16 letter, as we discussed at our subsequent meeting. The changes which were made are highlighted on this draft.

If the revised draft is acceptable to you, please let me know. We can then finalize the draft and have it routed for the appropriate signatures.

If you have any questions concerning this, please let me know.

Sincerely,

Charles Leveque
Attorney at Law
Bureau of Legal Services

CL:rh
v:\9110\lc9truax.cxl

cc: Tim Coughlin - SD
Lakshmi Sridharan - SW/3
Barb Gear - SW/3

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

In the matter of a groundwater)	
investigation and submittal of an)	
Environmental Contamination Assessment)	Proposed Consent Order
Report, Dane County Truax landfill, Lic.)	No. SOD-91-07
No. 3306 (formerly #0306), Dane County,)	
Wisconsin.)	

FINDINGS OF FACT, CONCLUSIONS OF LAW AND CONSENT ORDER

FINDINGS OF FACT

The Department finds that:

1. The City of Madison owned and formerly operated a landfill known as the Truax landfill, located in the NE 1/4 of Section 31, T8N, R10E, City of Madison, Dane County, Wisconsin.
2. The landfill is now owned by Dane County. The landfill and land surrounding it were conveyed to the County by the City in 1973.
3. The Department issued the City a license for the Truax landfill (license number 306) in 1972. In 1990, the Department assigned a new license number to the site (#3306) and a facility identification number (FID #113183620).
4. The landfill contains approximately 1,000,000 cubic yards of municipal waste. The City of Madison disposed of approximately 970,000 cubic yards of waste while it owned and operated the landfill from 1953 through 1972. Prior to operation by the City, the landfill was an open burning dump in the 1930's and a landfill for the U.S. Army in the 1940's.
5. The facility does not have a plan of operation approval under s. 144.44(3), Stats. It is considered to be a nonapproved facility under s. 144.441(1)(c), Stats. Prior to 1990, the Department had not approved any plans for the landfill.
6. On May 25, 1990, the Department, the County and the City entered into a consent order (#SOD-89-18) regarding the Truax landfill. Among other things, the consent order required the City and County to submit the following items to the Department within seven (7) months of the effective date of the order:
 - a. a Phase I In-field Conditions Report, and
 - b. plans for any additional proposed groundwater monitoring well locations and gas monitoring probes to complete data gaps identified in the Phase I report.

7. On December 26, 1990, the Department of Natural Resources received a Phase I In-field Conditions Report entitled "Final Report, City of Madison Truax landfill, Madison, Wisconsin". The report consisted of one volume of text, two volumes of appendices and 17 plan sheets. Dames and Moore submitted the report on behalf of the City and County. Dames and Moore submitted two corrected plan sheets on or about January 3, 1991.
8. On May 16, 1991, the Department of Natural Resources received a work plan entitled "City of Madison Truax Landfill Phase II Work Plan Madison, Wisconsin". The work plan consisted of one volume of text. A revised project schedule (page 4-18 of the report) was received May 17, 1991.
9. The Phase I In-field Conditions Report contains four (4) recommendations for further work to be done. They are:
 - a. Additional monitoring wells should be installed north and northwest of the landfill to more accurately determine the direction of groundwater flow in these upgradient areas. Discussions between the Department of Defense (DOD) and the PRPs (Potentially Responsible Parties) indicate that the DOD is planning an investigation of sources that appear to be upgradient of the landfill, and are potentially contributing contaminants to groundwater. The DOD should coordinate the location of these wells with the PRPs to optimize upgradient information for the landfill.
 - b. All monitoring wells in the existing network should be monitored for two more quarters to develop one complete year of data. These wells should be monitored for the parameters listed in NR 508.14 subsections (1) through (4), Wisconsin Administrative Code.
 - c. Completion of these proposed wells and incorporation into a site well network should be done to develop a monitoring program in coordination with the DOD and other PRPs. This will allow development of a database for accurate characterization of contaminant sources. The solid waste facility section, and the spill statute program should coordinate with companion sections within the facility department to develop investigation and remediation programs for these separate source areas.
 - d. Grading operations at the REYCO property south of the Truax landfill should be temporarily halted until final remedial action, if planned, is approved.
10. The Phase II Work Plan proposes that the County and City drill more borings, install additional wells and sample new and existing wells near the Truax landfill times before submittal of the Phase II report.
11. The Department considered the following documents while reviewing the Phase I In-field Conditions Report and the Phase II Work Plan:
 - a. "Hydrogeology of Solid Waste Sites in Madison, Wisconsin", R.J. Kaufman, Ph.D. thesis, University of Wisconsin, Madison, 1970.
 - b. May 23, 1984 report entitled "Truax Landfill Leachate Migration Study", prepared by the City of Madison Engineering Division.

- c. July 5, 1984 letter from Richard Schuff of the Department to David Benzschawel of the City responding to the May 23, 1984 report and requesting more information.
 - d. August 1, 1984 letter from the City, in response to the Department's July 5, 1984 letter, stating that Dane County owned the property and Dane County would have to conduct the additional studies.
 - e. September 25, 1984 letter from the Department to Dane County and the City of Madison.
 - f. March 1985 report entitled "An Informational Report for Truax Landfill" prepared by the City of Madison Engineering Division.
 - g. October 25, 1988 site inspection report.
 - h. May 1990 consent order between the Department of Natural Resources, the City and the County (Order number SOD-89-18).
 - i. October 16, 1990 letter from Barb Gear of the Department to Dave Trainor of Dames and Moore regarding possible locations for additional wells.
 - j. March 1, 1991 calculations of approximate volumes of leachate being generated at the landfill.
 - k. June 17, 1991 memo to the DNR file from Barb Gear outlining reasons for provisions of this order (see attachment A).
 - l. Other information found in the Department's files for this landfill.
12. In determining the need for additional investigation and the submittal of an Environmental Contamination Assessment Report, the Department considers the following facts to be significant:
- a. The Truax landfill is an unengineered landfill without a liner or a leachate collection system to retain and remove leachate. Based upon the information in the Phase I report, approximately 6 to 10 million gallons of precipitation are soaking into the landfill and becoming leachate each year. ~~Since the leachate is not being retained within and removed from the landfill, it is highly probable that the landfill is causing contamination of groundwater.~~
 - b. The Phase I report identifies a data gap north and northwest of the landfill, suggests that groundwater flows west of the landfill and recommends that additional wells be installed north and northwest of the landfill to "more accurately determine the direction of groundwater flow in these upgradient areas" (emphasis added). Although the report did not include specific plans for the additional wells as stipulated in provision 8 of the May 1990 consent order, the May 1991 work plan did include such plans.

- c. Department records indicate there are at least five nonpotable A-number of high capacity wells (of between 500 and 1000 foot depth) serving the Oscar Meyer Food Corp. plant and at least one high capacity public water supply well (Madison Well #7) existing in the immediate vicinity of the Truax landfill.
 - d. A clay layer below the Burke Sewage Treatment Plant and part of the Truax landfill A thick lacustrine clay layer (maximum measured depth of 152 feet at MW-5B, but possibly thicker) is present under the south and southeast portions of the site. The layer appears to thin to the north and truncates to the northwest where it intersects with the wall of the subterranean bedrock valley. This clay is termed a CL in the Unified Soil Classification system. The hydraulic conductivity of the clay ranges between 6×10^{-6} cm/sec and 9×10^{-8} cm/sec. While the regional groundwater flow tends to be from North to south, the effect of the local hi capacity wells and the clay layer appears to greatly influence groundwater flow directions in the immediate area. *
 - e. Groundwater standards have been exceeded in monitoring wells near the landfill, as listed in Table 7.11 of the Phase I Infield Conditions Report. The cause of the exceedances has not been determined at this time.
 - f. Enforcement standards have been exceeded outside the Design Management Zone. The cause of the exceedances has not been determined at this time.
 - g. Other potential known sources of contamination in the area include a jet fuel storage area and a practice burn site, both of which are north of the Truax landfill, and the former Burke Sewage Treatment Plant, which is south of the landfill. *
 - h. The United States Army Corps of Engineers is scheduled to undertake various investigative efforts at the jet fuel storage area during 1991 and 1992. Those investigative efforts are being coordinated with the Wisconsin Department of Natural Resources in order to facilitate integration of those results with any groundwater investigative efforts required pursuant to this order.
13. The background and long-term environmental monitoring programs are necessary to monitor the effects that the landfill and any remedial actions may have on groundwater quality.
14. The Order set forth below is needed to determine the extent of any potential hazard to public health, safety, welfare or the environment and to assure compliance with chs. NR 500-520, NR 141 and NR 140, Wis. Adm. Code.

CONCLUSIONS OF LAW

The Department concludes that:

1. The facility does not comply with s. NR 504.04(4)(d), Wis. Adm. Code.
2. The Department has the authority pursuant to ch. NR 140 and the applicable portions of chs. NR 500 through 520, Wis. Adm. Codes, to require an owner or operator to sample groundwater.

3. The Department has the authority pursuant to s. NR 140.24(1), Wis. Adm. Code, to require an owner or operator to evaluate impacts to the groundwater and to submit a report by a specific deadline describing the degree and extent of groundwater contamination, if a preventive action limit has been attained or exceeded at a point of standards application.
4. The Department has the authority to require the owner or operator of a landfill to submit an infield conditions report under s. 144.431(2)(b), Stats., and s. NR 508.20, Wis. Adm. Code.
5. The Department has the authority to require the submittal of a closure plan under s. NR 514.07, Wis. Adm. Code. The Department has the authority to require that the closure plan address any or all of the information contained in chs. NR 504, 508, 512, 514, 516 and s. NR 506.08, Wis. Adm Code, under s. NR 514.07, Wis. Adm. Code.
6. Under s. 144.44(4)(f), Stats., the Department of Natural Resources may require by special order, the environmental monitoring of a closed, non-approved facility, as defined under s. 144.441(1)(c), Stats.
7. The Department has authority under secs. 144.44(8) and 144.431, Stats., to order necessary corrective action at a landfill where minimum standards established under NR 504, Wis. Adm. Code have not been complied with.
8. The Department has authority to require a response under s. 160.23, Stats., and s. NR 140.24(4), Wis. Adm. Code, if a preventive action limit for a substance of health or welfare concern has been attained or exceeded at a point of standards application.
9. The Department has authority to require a response under s. 160.25, Stats., and s. NR 140.26(2), Wis. Adm. Code, if an enforcement standard for a substance of health or welfare concern has been attained or exceeded at a point of standards application.
10. The Department has authority under ss. NR 140.20, NR 140.24(1)(c)1.a., and NR 508.14, Wis. Adm. Code, to require sampling for background water quality and to specify indicator parameters for such sampling.
11. The order set forth below is needed to ensure compliance with Chapters NR 500-520 and NR 140, Wis. Adm. Code.
12. In accordance with the foregoing, the Department has authority under ss. 144.431(2)(b), 144.44(4)(f), 144.44(8), 160.23, 160.24 and 227.44(5), Stats., and Chapters NR 500-520, Wis. Adm. Code, to issue the following Order.
13. This order is enforceable under ss. 144.98 and 144.99, Stats.

ORDER

The Department, Dane County and the City of Madison agree to the following and the Department therefore orders that:

Further investigations

1. By September 1, 1991, Dane County and the City of Madison shall install monitoring wells and drill borings at the locations and according to the methods designated in the Phase II Work Plan, subject to the following conditions:
 - a. All exploratory borings shall be drilled to bedrock.
 - b. All bedrock wells shall be screened in competent bedrock.
 - c. Soil borings shall be sampled and soil samples analyzed according to s. NR 508.09, Wis. Adm. Code (in addition to NR 141, as proposed).

2. By March 1, 1992, Dane County and the City of Madison shall implement the rest of the Phase II Work Plan, subject to the following conditions:
 - a. Documentation of well installation, soil samples, well development, boring abandonment shall be submitted in the environmental contamination assessment report required in provision 4, below.
 - b. All new wells shall be sampled for the same parameters and at the same frequency as the other wells listed in conditions 5 and 6, below.

3. By November 1, 1991, Dane County and the City of Madison shall submit to the Department the following information and documentation. If any information is unavailable, the County and City shall document attempts to obtain the information.
 - a. An 8 1/2 by 11 inch map of the landfill. The map shall include, on a local grid system, the locations of: the limits of fill, property boundaries, all existing and abandoned monitoring wells, all stormwater retention basins and the Design Management Zone (DMZ). (The DMZ is 300 feet from the approved limits of fill or the property boundary, whichever is closer.)
 - b. A Well Information Form (WIF) listing all existing and abandoned groundwater wells; all surface water monitoring locations; all new groundwater and leachate wells; and names and addresses of all known private wells within one-half mile of the landfill. The WIF shall correctly designate groundwater monitoring wells as either water table observation wells or piezometers. All elevations shall be double checked for accuracy (for example the elevation of the top of the screen should equal the elevation of the bottom of well plus the length of screen).

Note: The Groundwater Monitoring Well Information Form, number 4400-89, updated 1/90, is being revised again. Call Jack Connelly (267-7574) to see if the revision is available when you are ready to fill out the form.
 - c. A description of the wells listed in paragraph 6e., below. The description should include known or probable well construction details and an opinion of the usefulness of each well for monitoring groundwater quality and water level elevation.

Environmental Contamination Assessment Report

4. By March 1, 1992, Dane County and the City of Madison shall prepare and submit to the Department for approval an Environmental Contamination Assessment report which shall contain the following:
 - a. Results of groundwater investigation (according to the "Phase II Work Plan", as approved in provisions 1 and 2, above) and data previously gathered at the landfill. The results shall be presented according to ss. NR 508.20(6) through (10), Wis. Adm. Code.
 - b. Revised versions of any plan sheets and geologic cross-sections previously submitted, if the results of the latest investigations alter previous interpretations.
 - c. A description of how the latest investigations change the conclusions drawn in the Phase I report.
 - d. A separate topographic plan sheet meeting the requirements of s. NR 508.20(6)(a), Wis. Adm. Code, except that the plan may have a minimum scale of 1" = 500' if necessary, and showing:
 - i. all public and private wells within one half mile of the landfill, noting the exact addresses and names (e.g, PW-1) of wells that have been sampled before.
 - ii. all active and abandoned groundwater monitoring wells .
 - iii. all known possible sources of groundwater contamination, such as landfilled areas, spills, areas where spills were likely to have occurred, areas of landspreading, salt storage, wastewater discharge points, storm and sanitary sewers, septic systems, channelized or unchannelized surface water flow.
 - e. An evaluation of the degree and extent of groundwater contamination, fully addressing the ten points of s. NR 140.24(1)(c), Wis. Adm. Code.
 - f. If necessary, proposals for additional investigations before final assessment and selection of responses may be made. Such proposals, if appropriate, shall evaluate the results of the Army Corps of Engineers investigations into groundwater contamination of the potential source areas in the vicinity of the landfill, provided that the information is available at the time of the submittal of the Environmental Contamination Assessment Report.
 - g. A proposal for potential responses which are economically and technically feasible for renovating or restoring groundwater and surface water quality if necessary.
 - h. Selection of a preferred alternative response which will result in compliance with the groundwater standards in NR 140, Wis. Adm. Code, and other objectives. Justification of why responses other than proposed are not technically or economically feasible to implement shall be included.

- i. Preliminary plans and specifications for the response, including costs for construction, operation and maintenance over the predicted life of the response.
- j. Justification of any requests for exemptions to the NR 140 Preventive Action Limits at any monitoring well at the facility.
- k. Documentation of wells and borings, as follows

Regarding any new, replaced or repaired wells:

- i. Well construction details, using Monitoring Well Construction Form 4400-113A (updated 4-90),
- ii. Well development information, using Monitoring Well Development Form 4400-113B (updated 4-90),
- iii. Soil boring information, using Soil Boring Log Information Form 4400-122, and
- iv. Other soils information, according to s. NR 508.09, Wis. Adm. Code.

Regarding abandoned wells or boreholes:

- i. Soil boring information, using Soil Boring Log Information Form 4400-122, and
 - ii. Abandonment details, using Well/Drillhole/Borehole Abandonment Form 3300-5B (updated 8-89).
- l. A proposal for long-term environmental monitoring designed to evaluate the effects both of the response(s) and of the continued performance of the facility. This proposal shall include sampling of groundwater, leachate, landfill gas and gas condensate.
 - m. Any groundwater data evaluated in the report which has not previously been submitted to the Department.

Background Groundwater Monitoring

- 5. Dane County and the City of Madison shall comply with background groundwater monitoring requirements as specified in s. NR 508.14, Wis. Adm. Code, for all existing, new, repaired and replaced wells installed to monitor groundwater conditions near the landfill. The background samples shall be taken quarterly until this requirement is fulfilled, beginning within 4 months of the effective date of this Order and ending within two (2) years of a well's installation. The City and County may include samples acquired prior to the date of this Order among its background samples, provided that the samples meet the requirements of s. NR 140.16, Wis. Adm. Code. The background data shall be submitted on "background TAD" forms supplied by the Department or on microdiskette (contact Tim Sagal, 267-0559, for information about this option).

Routine Groundwater Monitoring

6. Beginning within 120 days after the effective date of this Order, Dane County and the City of Madison shall collect, analyze and report samples from groundwater monitoring wells quarterly, as follows:

- a. Obtain water level elevation readings from all wells on site before purging wells for quarterly sampling. Report these data in feet above mean sea level (MSL), to an accuracy of 0.01 foot.
- b. Sample wells listed below and all new wells (according to the approved Phase II work plan and any subsequent plans), repaired wells or replacement wells for the parameters listed in points c. and d., below:

<u>Well Name/DNR ID No.</u>		<u>Well Name/DNR ID No.</u>	
MW-1	[001]	MW-9	[029]
MW-1A	[003]	MW-10	[031]
MW-2	[005]	MW-11	[063]
MW-3	[007]	MW-12	[065]
MW-3A	[009]	MW-13	[067]
MW-4	[011]	MW-13A	[069]
MW-4A	[013]	MW-14	[071]
MW-4B	[015]	TG-1	[033]
MW-5	[017]	TG-2	[035]
MW-5A	[019]	200S	[043]
MW-5B	[021]	Oscar #3	[203]
MW-6	[023]	Oscar #5	[205]
MW-7	[025]		
MW-8	[027]		

- c. Determine and record color, odor and turbidity qualitatively while collecting samples.

- d. Collect and analyze samples for the following parameters:

<u>Parameter</u>	<u>Parameter number</u>
Elevation in feet above MSL	00842
Field Temperature	00010
Field Specific Conductance (uncorrected)*	00402
Field Specific Conductance (corr. to 25 C)	00872
Field pH	00400
Chloride	00307
Iron, dissolved	01046
COD, dissolved	00341
Total Hardness, filtered	22413
Calcium, dissolved	00915
Magnesium, dissolved	00925
Total Alkalinity, filtered	39036
Nitrate-nitrogen, dissolved	00621
Total dissolved solids	00360
Volatile Organic Compounds - Scan	84085

* May be omitted if meter corrects to 25 degrees Centigrade.

- e. Sample all other functioning wells for water level elevation. These wells shall include the following, unless they have been abandoned (in which case, submit abandonment documentation. See paragraph 3c., above):

Well Name/DNR ID No.

TG-3	[037]
TG-4	[039]
200	[041]
104	[051]
121A	[053]
113	[055]
130D	[057]
130E	[059]
21A	[061]

- f. Sample wells quarterly during the months of March, June, September and December for all parameters except the VOC scan.
- g. Sample wells semi-annually for the VOC scan during the months of June and December.
- h. Analyze the samples for VOCs using EPA Solid Waste Methods 8021, 8260, 8010/8020 or 8240. We prefer that you use methods 8021 or 8260. These methods are described in EPA Document SW-846, "Test Methods for Evaluating Solid Waste," third edition, November 1986, including updates from December 1987 and November 1990.

- i. Submit data on forms provided by the department (TAD forms, Background TAD forms and VOC Monitoring Report forms), or electronically on microdiskette. Submit forms within 60 days of the end of the sampling period.
 - j. Report the results from the analysis of a field blank, trip blank, and duplicate samples on a TAD form.
 - k. Dane County and the City of Madison may apply to the Department for a change in any of the monitoring requirements in this paragraph. Such applications shall include technical justification for the changes. The Department will not unreasonably withhold approval of the changes.
7. Dane County and the City of Madison shall collect and analyze all groundwater samples and document sampling procedures according to the Phase II work plan, as approved in provisions 1 and 2, above.

Remediation

8. By February 1, 1993, Dane County and the City of Madison shall submit to the Department for approval final plans for any remedial actions determined to be necessary based upon the groundwater investigations conducted pursuant to this Order. The report and plans submitted shall conform to applicable portions of ss. NR 500.05, 504.07, 512.17, 514.04, 514.05 and ch. 516, Wis. Adm. Code. The plans shall include:
- a. Narrative describing the remediation, including a phased installation plan.
 - b. Plan sheets showing details of all aspects of the proposed remediation.
 - c. Proposed sources and specifications for all materials to be used, including any of the following are proposed to be used: soils, topsoil, drainage materials, geotextiles, and seed mixtures.
 - d. Identification and characterization of potential borrow sources for fine-grained soils (see NR 512.18, Wis. Adm. Code).
 - e. Proposed erosion control measures to be taken during construction and storage of soil materials.
 - f. A proposed quality control plan.
 - g. A proposed health and safety plan for protecting site investigators and the general public during site remediations.
 - h. Cost estimates for the project.
 - i. Proposed schedule for completion of the project.
- ~~9. By February 1, 1994, Dane County and the City of Madison shall complete construction of the approved design features associated with the remedial actions approved by the Department.~~

~~10. By May 1, 1994, Dane County and the City of Madison shall submit site construction documentation for the remedial actions.~~

Other provisions

9. Dane County and the City of Madison shall contact the Department's area solid waste investigator, and either the plan review engineer or hydrogeologist assigned to the Truax landfill, at least one week before beginning each of the construction events listed below. The contact will allow the Department to inspect the construction. The County and City shall pay a fee to the Department for each required inspection which the Department actually completes, in accordance with s. NR 520.04(5), Wis. Adm. Code. The inspection fees shall be submitted with the pertinent construction documentation report.

Construction events:

- a. Boring completions and well installations
 - b. Other events to be listed in subsequent approvals
10. Any proposed changes to the consent order shall be submitted to and approved by the Department prior to implementation.
11. To the extent that work under this Order is required on property that is presently owned by parties other than those bound by this Order, Dane county and the City of Madison shall use their best efforts to obtain reasonable access from the present owners before the work on the site is scheduled to commence.
12. Dane County, the City of Madison and the Department expressly reserve all rights (including but not limited to any right of contribution possessed by Dane County and the City of Madison or against any other parties who may be responsible), claims, demands, and causes of action that they have or may have against all other persons and entities who are not parties to this Order.
13. Nothing in the Order shall be construed as an admission of liability on the part of Dane County or the City of Madison, for any purpose other than for action taken for failure to comply with the terms of this Order.
14. In the event Dane County or the City of Madison is unable to complete any of the above because of the happening of an event over which it had no control, including, but not limited to, an Act of the United States of America, the State of Wisconsin, or any government, or the unreasonable delay or failure of any agency of the State of Wisconsin, or any other government agency to act with respect to any necessary approval or permit issuance, compliance with the schedules set forth above shall be extended by the amount of time of delay caused by such an event. In the event that Dane County and the City of Madison are unable to complete any of the above because of a happening of any event over which they had little control, the Department shall not unreasonably refuse to modify this Order to allow more time to achieve the specified activity.

15. Unless specifically indicated, the provisions of the Order do not supersede or replace any previous orders or plan approvals for the Truax landfill. The Department acknowledges that the provisions of Order No. 89-SOD-18 have been complied with.

Dated at Madison, Wisconsin, this ____ day of _____, 1991.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

John L. LaFontaine
Director
Office of Environmental Enforcement

STIPULATION AND WAIVER

Dane County and the City of Madison hereby stipulate to the issuance of this Consent Order and waive further notice of their hearing rights, waive their statutory right to demand a hearing before the Department regarding this Consent Order and waive their right to challenge this Consent Order in Circuit Court under ss. 144.431, 144.44(8), 227.52 and 227.53, Stats., or under any other provision of law. Dane County and the City of Madison further stipulate that this Consent Order is enforceable under ss. 144.98 and 144.99, Stats., as soon as it is signed by the Department. The undersigned certify that they are authorized to sign this Consent Order and Stipulation and Waiver on behalf of Dane County and the City of Madison.

DANE COUNTY

Richard J. Phelps, Dane County Executive

Date

CITY OF MADISON

ATTEST:

Paul R. Soglin, City of Madison Mayor

Andre Blum, City Clerk

APPROVED AS TO FORM:

Linda M. Clifford, Special Environmental
Counsel for Dane County

Date

Peter Peshek, Special Environmental
Counsel for the City of Madison

Date

COUNTERSIGNED:

Paul R. Reilly, Comptroller

JL:bbg;tru6.ord

**MADISON METROPOLITAN
SEWERAGE DISTRICT**

1610 Moorland Road
Madison, WI 53713-3398

Telephone (608) 222-1201

James L. Nemke
Chief Engineer & Director



COMMISSIONERS

Lawrence B. Polkowski
President
Edward V. Schten
Vice-President
Harold L. Lautz
Secretary
Eugene O. Gehl
Commissioner
Stephen J. Hiniker
Commissioner

January 29, 1992

Ms. Linda Clifford
LaFollette Sinykin
One East Main Street
P.O. Box 2719
Madison, WI 53701

Re: Truax Landfill

Dear Ms. Clifford:

Pursuant to the recent meeting on the Truax Landfill investigation, I have checked on the status of closure activities for the decant pond and sludge lagoons associated with the former Burke wastewater treatment plant.

Enclosed is a copy of a letter from Reyco Madison, Inc. to the Wisconsin Department of Natural Resources proposing a plan for closure of the sludge facilities. Although this letter was sent November 4, 1991, there has been no reply as yet from the WDNR. Sludge samples were taken and analyzed for the constituents noted. No further action has been initiated.

I will continue to track activities related to the Burke wastewater treatment plant, and will be able to provide you with a further update at the next meeting of the Truax PRPs. Should you have any questions in the interim, please give me a call.

Sincerely,

Peter Ruffier
Director of Special Projects

encl.

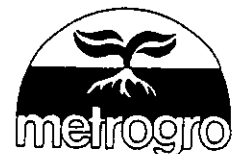
cc to Steering Committee 1/31/92:

David Benzschawel
Peter Drahn
Duane Hickling
Ken Kosciak
Ronald Mengel
James Nemke
Peter Peshek
Dave Reynolds
W. Gerald Thursby
David Trainor
James Voss
Linda White
Steve Wittmann

RECEIVED

JAN 30 1992

Ans'd.....



REYCO MADISON, INC.
301 SOUTH BLOUNT STREET
MADISON, WISCONSIN 53703

November 4, 1991

Wisconsin Department of Natural Resources
Southern District
3911 Fish Hatchery Road
Fitchburg, Wisconsin 53711

Attn: Mr. Jim Perry

Dear Mr. Perry,

Reyco Madison, Inc currently owns the property where the former Burke Wastewater Treatment Plant was located. This property is located in section 31, T 8N, R 10E, of the City of Madison. It is directly to the west of the Shopko Store and is bordered by Packers Avenue and Aberg Avenue to the west and south respectively. A map showing the general site location is attached. The site was inspected by yourself and Mr. Dave Taylor of MMSD on October 18, 1991.

The site contains a sludge decant pond and a sludge lagoon that were used by Oscar Mayer for the treatment/storage of sludge generated as part of the treatment of meat processing wastes. These areas were last used for this purpose over twenty years ago. Both the pond and the lagoon contain a relatively thin layer (approximately 12 to 24 inches) of dry sludge with a "peat like" consistency. The total volume is estimated to be approximately 3000 to 4000 cubic yards, based on initial cores taken in these areas. A map showing the specific location of the decant pond and the sludge lagoon on the site is attached.

As part of ongoing activities at the former Burke Wastewater Treatment Plant, we would like to initiate closure activities for the decant pond and sludge lagoon. The following general approach is proposed for the closure activities:

One composite sludge sample will be collected from both the decant pond and the sludge lagoon. The composite samples will be comprised of five (5) individual cores taken at random locations within each "cell". Each composite sample will be analyzed for the following parameters: Total Solids, NH4-N, TKN, Total-P, Total-K, As, Ba, Cd, Cr, CU, Hg, Ni, Pb, Se, and Zn. This information will be submitted to the DNR.

The sludge will be stripped and temporarily stockpiled on site. Appropriate measures will be taken to prevent

runoff during the time that the material is stockpiled.


The decant pond and sludge lagoon will be filled in by using either fill currently at the site or imported fill material.

The stockpiled dry sludge will then be spread over the filled in areas as a soil conditioner.

The site will be allowed to revegetate naturally.

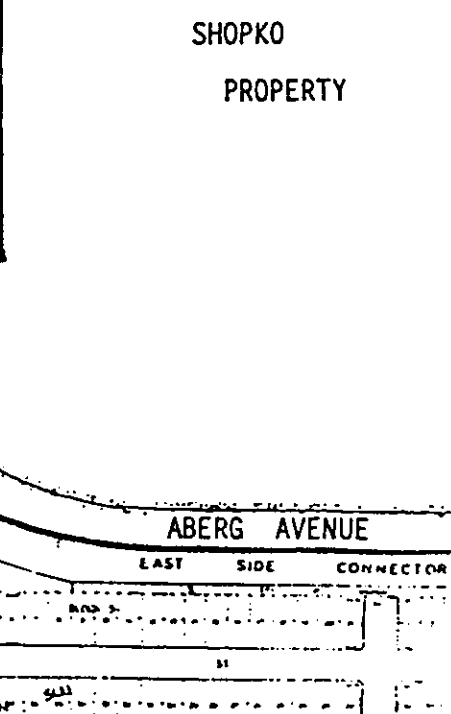
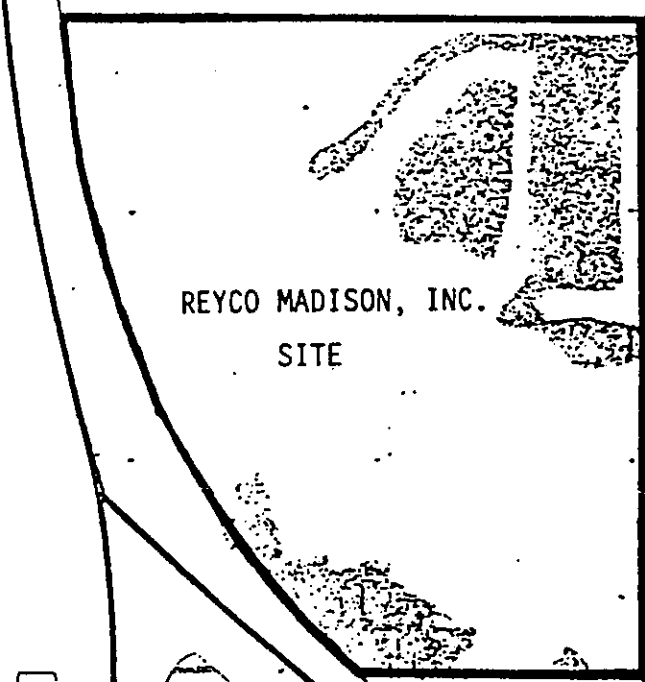
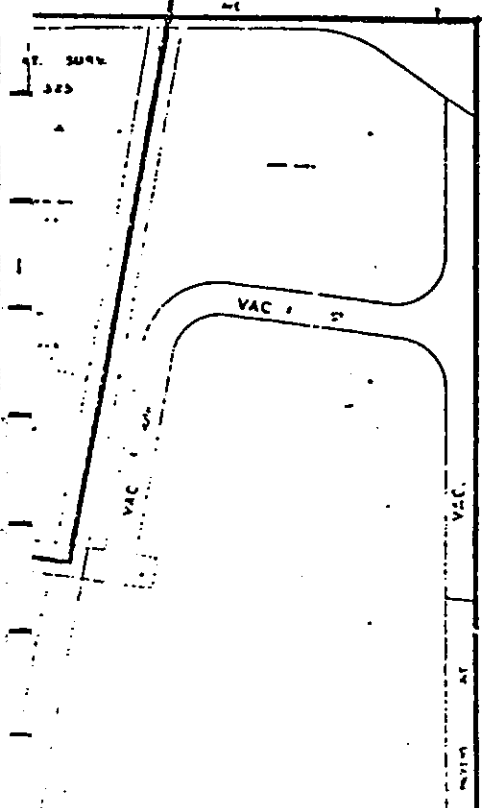
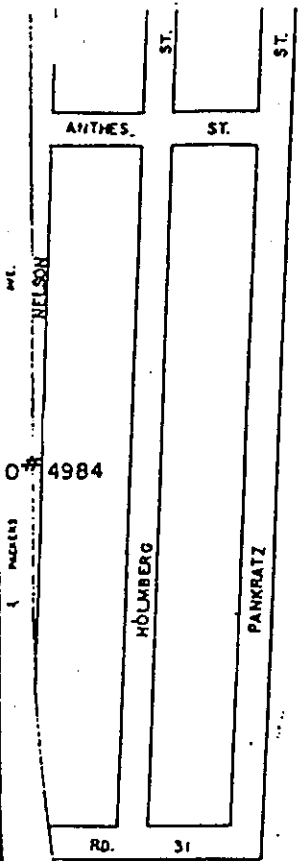
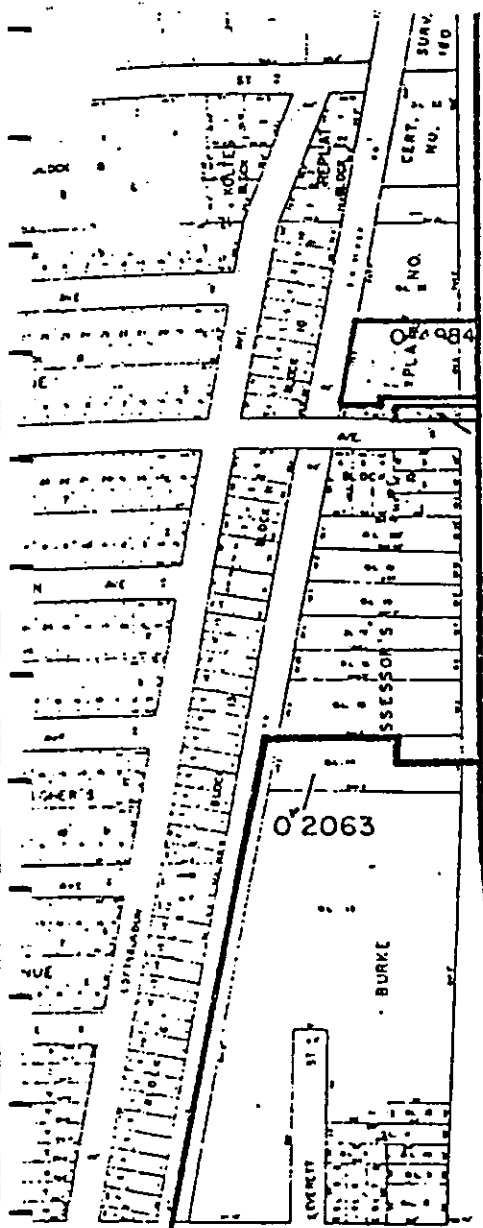
Following closure, we will provide you with a letter detailing all associated activities that took place. We would like to conduct closure activities this fall if possible. We appreciate your willingness to review this closure plan on such short notice. Please contact me if you need any additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "David H. Reynolds". The signature is fluid and cursive, with a long horizontal stroke at the end.

David H. Reynolds, President

Phone 257-3914



02063

4984

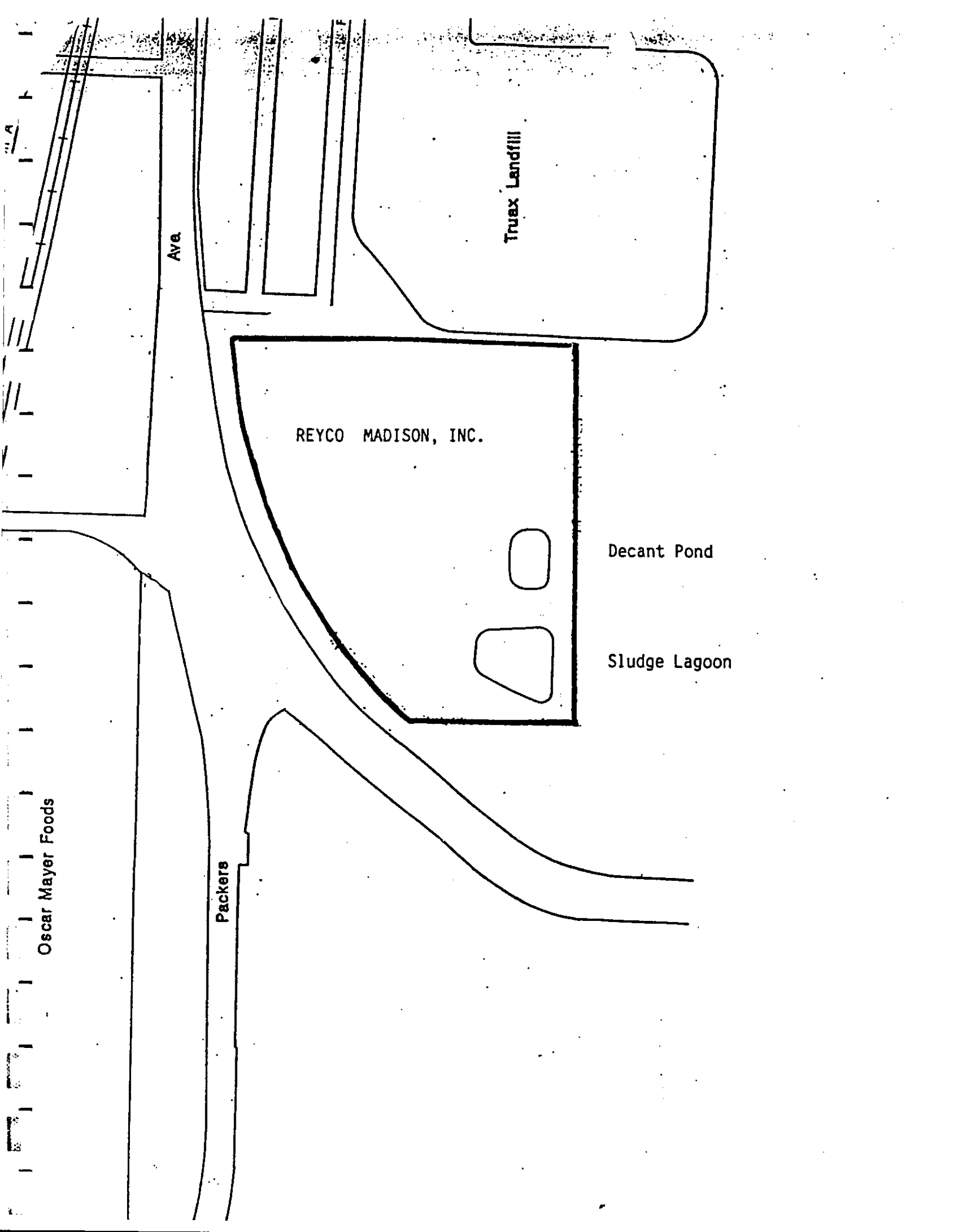
REYCO MADISON, INC.
SITE

SHOPKO
PROPERTY

ABERG AVENUE

EAST SIDE CONNECTOR

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100



Ave.

Truax Landfill

REYCO MADISON, INC.

Decant Pond

Sludge Lagoon

Packers

Oscar Mayer Foods

**MADISON METROPOLITAN
SEWERAGE DISTRICT**

1610 Moorland Road
Madison, WI 53713-3398

Telephone (608) 222-1201

James L. Nemke
Chief Engineer & Director



COMMISSIONERS

Lawrence B. Polkowski
President
Edward V. Schien
Vice-President
Harold L. Lautz
Secretary
Eugene O. Gehl
Commissioner
Stephen J. Hiniker
Commissioner

February 4, 1992

Mr. David Reynolds
REYCO Madison, Inc.
301 South Blount Street
Madison, Wisconsin 53703

Dear Mr. Reynolds:

Attached for your information is a copy of the laboratory results from the sludge samples analyzed from the Burke site.

These results are typical of a domestic wastewater sludge, and should not preclude the type of closure activities that you have proposed for the former Burke wastewater treatment plant.

If you should have any questions about the data, please contact David Taylor, Metrogro Manager for the District.

In regards to the actual closure project, I doubt that the District would be able to provide any direct involvement as may be suggested by the expected letter from the Department of Natural Resources. I would appreciate getting a copy of the approval letter once you receive it and would be happy to provide you with our comments or concerns, if any.

Sincerely,

Peter Ruffier
Director of Special Projects

encl.



REYCO # 1 (South Bed)

BWR ID	Parameter	Wet Wt. (ppm)	Total Solids	Dry Wt.	Dry Wt. Detection Limit	Date Analyzed	Method used
61553	TS		56.40	56.4 %		11/27/91	see below
61571	TKN	9708	56.40	1.72 %	0.04 %	12/03/91	see below
61572	NH4-N	53	56.40	0.01 %	0.02 %	12/03/91	see below
61573	P	17572	56.40	3.12 %	0.02 %	01/10/92	see below
61570	K	256	56.40	0.05 %	0.001 %	12/10/91	see below
61527	Cd	2.5	56.40	4.5 mg/kg	0.1 mg/kg	12/06/91	see below
61506	Cu	87.5	56.40	155.1 mg/kg	1.8 mg/kg	12/16/91	see below
61512	Cr	10.3	56.40	18.3 mg/kg	0.4 mg/kg	12/16/91	see below
61503	Pb	53.2	56.40	94.3 mg/kg	0.9 mg/kg	12/06/91	see below
61500	Hg	2.5	56.40	4.5 mg/kg	0.1 mg/kg	01/10/92	see below
61515	Ni	10.0	56.40	17.7 mg/kg	0.4 mg/kg	12/05/91	see below
61509	Zn	1060.0	56.40	1879.4 mg/kg	5.3 mg/kg	12/17/91	see below

- 1) TS: Std methods 2540B
- 2) NH4-N: EPA 350.2
- 3) TKN: EPA 351.3
- 4) Cd,Cr,Cu,Ni,Pb,Zn,K: Std methods(17th edition) 3111B
- 5) Hg: EPA 245.5
- 6) P: Std methods(17th edition) 4500-PE

Sample analyzed by: 113002230
MMSD Labs
1610 Moorland Road
Madison, WI 53713

REYCO # 2 (North Decant Bed)

DNR ID	Parameter	Wet Wt. (ppm)	Total Solids	Dry Wt.	Dry Wt. Detection Limit	Date Analyzed	Method used
81553	TS		58.40	58.4 %		11/27/91	see below
81571	TKN	7894	58.40	1.35 %	0.03 %	12/03/91	see below
81572	NH4-N	55	58.40	0.01 %	0.02 %	12/03/91	see below
81573	P	10930	58.40	1.88 %	0.02 %	01/10/92	see below
81570	K	346	58.40	0.05 %	0.001 %	12/10/91	see below
81527	Cd	1.4	58.40	2.4 mg/kg	0.1 mg/kg	12/06/91	see below
81506	Cu	51.1	58.40	87.5 mg/kg	1.7 mg/kg	12/16/91	see below
81512	Cr	7.3	58.40	13.4 mg/kg	0.3 mg/kg	12/15/91	see below
81503	Pb	37.4	58.40	64.0 mg/kg	0.9 mg/kg	12/06/91	see below
81500	Hg	1.7	58.40	2.9 mg/kg	0.1 mg/kg	01/10/92	see below
81515	Ni	8.0	58.40	13.7 mg/kg	0.3 mg/kg	12/05/91	see below
81509	Zn	610.0	58.40	1044.5 mg/kg	5.1 mg/kg	12/17/91	see below

- 1) TS: Std methods 2540G
- 2) NH4-N: EPA 350.2
- 3) TKN: EPA 351.3
- 4) Cd, Cr, Cu, Ni, Pb, Zn, K: Std methods (17th edition) 3111B
- 5) Hg: EPA 245.5
- 6) P: Std methods (17th edition) 4500-PE

Sample analyzed by: 113002230
MMSD Labs
1610 Moorland Road
Madison, WI 53713



Hazleton Environmental Services (HES) for Madison Metropolitan Sewerage District
 HES Wisconsin Certification No.: 113016640
 Purchase Order No.: B24109
 Reyco Dry Sludge
 Received: 11/27/91
 Metals extraction (date set): 12/23/91

DNR Param ID No.	Parameter Name	Wet Weight Result (mg/kg)	Sample Total Solids	Dry Weight Result (mg/kg)	Date Analyzed
<u>Sludge: (Dry Sludge); Reyco #1; 11/26/91 (HES number 11105376)</u>					
61521	Arsenic	10.8 (0.01)	58.6 %	18.42 (0.017)	01/01/92
	Barium	26.1 (0.25)	58.6 %	44.53 (0.427)	12/31/91
61518	Selenium	1.53 (0.006)	58.6 %	2.61 (0.010)	01/06/92

Sludge: (Dry Sludge); Reyco #2; 11/26/91 (HES number 11105377)

61521	Arsenic	8.40 (0.01)	61.5 %	13.66 (0.016)	01/01/92
	Barium	24.600 (0.25)	61.5 %	40.00 (0.407)	12/31/91
61518	Selenium	1.13 (0.006)	61.5 %	1.84 (0.010)	01/06/92

Method References

Arsenic
 "Test Methods for Evaluating Solid Waste," EPA Publication No. SW-846, Second Edition, Methods (3030, 3040, or 3050) and 7060; U.S. EPA, Washington, D.C. (Revised April, 1984).

Barium
 "Test Methods for Evaluating Solid Waste," EPA Publication No. SW-846, Second Edition, Methods (3030, 3040, or 3050) and 6010; U.S. EPA, Washington, D.C. (Revised April, 1984).

Selenium
 "Test Methods for Evaluating Solid Waste," EPA Publication No. SW-846, Second Edition, Methods (3030, 3040, or 3050) and 7740; U.S. EPA, Washington, D.C. (Revised April, 1984).

Moisture for Environmental Samples
 U.S. EPA Contract Laboratory Program, Statement of Work for Inorganic Analysis, Multi-Media, Multi-Concentration, 3/90 (ILMO 1.0), Part F, pg. D-98.



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Southern District Headquarters
3911 Fish Hatchery Road
Fitchburg, Wisconsin 53711
TELEPHONE 608-275-3266
TELEFAX 608-275-3338

Carroll D. Besadny
Secretary

MADISON METROPOLITAN
SEWERAGE DISTRICT
RECEIVED

March 30, 1992

FILE REF: 3400

APR 1 1992

Mr. David H. Reynolds, President
Reyco Madison, Inc.
301 South Blount Street
Madison, WI 53703

Subject: CLOSURE OF SLUDGE LAGOON

Dear Mr. Reynolds:

I have conditionally approved the closure operations for the decant pond and sludge lagoon located at the former Burke Wastewater Treatment Facility.

There are several minor modifications I would like to see incorporated within the management plan. Groundwater monitoring wells at the site shall be maintained and groundwater sampling shall occur at each well, at three-month intervals. Sampling parameters shall include nitrate-nitrogen, chlorides, fecal coliform and chemical oxygen demand. Well abandonment may proceed after our review of the well data shows that no detrimental impacts on the groundwater. Well abandonment must follow procedures described in Chapter NR 141 of the Wisconsin Administrative Code and documentation of well abandonment shall be provided to the Department. Any wells that are found to be in an inoperable condition must be properly abandoned. All abandoned and updated wells must be identified on a topographic plan sheet.

The stockpiled sludge shall be located a distance of greater than 500 feet from any public access area. The sludge shall be maintained in a manner to prevent erosion (by either wind or water) of sludge from the stockpiled area. This may necessitate berming the area or covering the pile. It is desirable that the sludge be landspread at the earliest practical time. The land-spreading must include incorporation. Loading rates shall be based on available nitrogen of the sludge and the nitrogen recommendations of the cover crop. The surface soil shall contain a minimum of six inches of soil material. The final topography of the area shall prohibit the ponding of runoff waters at the site. The site must be seeded with an appropriate cover crop to prevent erosion. A residence inspector shall be available at all times to direct the construction activities in a manner consistent with the management plan and applicable administrative codes.



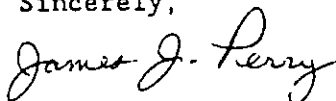
Mr. David H. Reynolds - March 30, 1992

2.

Please let me know if you are able to incorporate the modifications within your management plan. Also, when do you expect the project to start and end? Who will be the contact person at the site?

If you have questions or require additional information, please contact me at (608) 275-3325.

Sincerely,



James J. Perry
Sludge/Septage Management Specialist

JPP:kas
9205\WW1REYCO.JJP

cc: John Melby, Unit Leader, WW/2
George Osipoff, Environmental Engineer, Madison Area
Dave Taylor, Madison Metropolitan Sewerage District, 1610 Moorland Road,
Madison, WI 53713-3398

Appendix I

WDNR NR 720 Soil Cleanup Standards

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Chapter NR 720

SOIL CLEANUP STANDARDS

NR 720.01	Purpose.	NR 720.09	Determination of residual contaminant levels based on protection of groundwater.
NR 720.02	Applicability.	NR 720.11	Determining residual contaminant levels based on protection of human health from direct contact with contaminated soil.
NR 720.03	Definitions.	NR 720.19	Procedure for determining soil cleanup standards specific to a site or facility.
NR 720.05	General.		
NR 720.07	Procedures for establishing soil cleanup standards applicable to a site or facility.		

Note: Corrections made under s. 13.93 (2m) (b) 7., Stats., Register, January, 2001, No. 541.

NR 720.01 Purpose. The purpose of this chapter is to establish soil cleanup standards, for the remediation of soil contamination, which result in restoration of the environment to the extent practicable, minimize harmful effects to the air, lands and waters of the state and are protective of public health, safety and welfare, and the environment as required by ss. 292.11, 292.15, and 292.31, Stats., and which are consistent with ch. 160, Stats., and ch. NR 140. This chapter is adopted pursuant to ss. 227.11 (2), 289.06 (1), (2), 292.11, 292.15, and 292.31, Stats.

History: Cr. Register, March, 1995, No. 471, eff. 4-1-95; am., Register, February, 1996, No. 482, eff. 3-1-96.

NR 720.02 Applicability. (1) Except as provided in sub. (1m), this chapter applies to all remedial actions taken by responsible parties to address soil contamination after an investigation has been conducted at a site, facility or portion of a site or facility that is subject to regulation under s. 292.11 or 292.31, Stats., regardless of whether there is direct involvement or oversight by the department. This chapter also applies to soil contamination at all of the following:

(a) Solid waste facilities, where remedial action is required by the department pursuant to s. NR 508.04 (4);

Note: Chapter NR 720 does not apply to landspreading regulated under ch. NR 518 or solid waste facilities where ongoing operations are occurring, unless remedial action is required pursuant to s. NR 508.04 (4).

(b) Hazardous waste facilities, where the owner or operator is required to close the facility pursuant to s. 291.29, Stats., or ch. NR 685, to institute corrective action pursuant to s. 291.37, Stats., or s. NR 635.17, or to meet requirements imposed by the department under s. NR 600.07 where a discharge has occurred. However, if U.S. EPA requires that states employ soil cleanup standards for hazardous waste facilities that are more stringent than the standards in this chapter, the department is obligated under the state's hazardous waste management act, ch. 291, Stats., and its hazardous waste program RCRA authorization to apply the more stringent soil cleanup standards.

(c) Wastewater lagoons, storage structures and treatment structures that are abandoned pursuant to s. NR 110.09, 213.07 or 214.08.

Note: Chapter NR 720 applies to abandonment of lagoons, storage structures and treatment structures for sewage treatment facilities projects; abandonment of lagoons, storage structures and treatment structures that receive wastewaters, associated sludges, by-product solids and any resulting leachates from industrial, commercial or agricultural sources, except as provided in s. NR 213.02 (2); and abandonment of land treatment systems for industrial liquid wastes, by-product solids and sludges, except as provided in s. NR 214.02 (3). Chapter NR 720 does not apply to activities regulated under s. 281.48, Stats., or permitted activities regulated under 40 CFR 503 or ch. NR 204, 206 or 214, including permitted land spreading of sludge or land disposal of wastewaters from municipal and domestic wastewater treatment works and permitted land treatment of industrial liquid wastes, by-product solids and sludges.

(d) Sites where remedial action is being taken by a person who is seeking the liability exemption under s. 292.15, Stats.

(1m) This chapter is not applicable to sites contaminated with petroleum products discharged from petroleum storage tanks that satisfy all of the risk screening criteria in s. NR 746.06 (2) and are eligible for closure under s. NR 746.07 or 746.08.

Note: If sites and facilities that are contaminated with petroleum products discharged from petroleum storage tanks do not satisfy the risk screening criteria in s. NR 746.06 (2) or the closure requirements of s. NR 746.07 or 746.08, the site or facility would be still be subject to this chapter.

(2) This chapter applies to interim actions taken by responsible parties or other persons under s. 292.15, Stats., when at the completion of both the site investigation and interim action taken to address contaminated soil, the responsible parties or persons taking action under s. 292.15, Stats., request that the site or facility be closed out in accordance with ch. NR 726, without taking a subsequent remedial action to address the contaminated soil.

(3) This chapter applies to remedial actions taken by the department where a department-funded response action is being taken under the authority of s. 292.11 or 292.31, Stats.

(4) Concentrations of legally applied pesticides are exempt from the requirements of this chapter when all of the following conditions are met:

- (a) The application of the pesticide was done in compliance with:
 1. The pesticide label currently registered with the U.S. EPA;
 2. Sections 94.67 to 94.71, Stats.; and
 3. Rules adopted under ss. 94.67 to 94.71, Stats.

(b) For pesticides that are intended to be applied to the soil, pesticide concentrations exceeding soil cleanup standards are only found in the surface soil layer, where the pesticide is expected to perform its intended purpose, and only at concentrations that would be expected from pesticide application, in compliance with the pesticide label requirements.

Note: The depth of the surface layer of soil will vary depending on the type of pesticide applied and the appropriate intended use of that pesticide.

(5) The department may exercise enforcement discretion on a case-by-case basis and choose to regulate a site, facility or a portion of a site or facility under only one of a number of potentially applicable statutory authorities. However, where overlapping restrictions or requirements apply, the more restrictive control. The department shall, after receipt of a request from a responsible party, provide a letter that indicates which regulatory program or programs the department considers to be applicable.

Note: Sites, facilities or portions of a site or facility that are subject to regulation under s. 292.11 or 292.31, Stats., may also be subject to regulation under other statutes, including solid waste statutes, ch. 289, Stats., or the hazardous waste management act, ch. 291, Stats., and the administrative rules adopted pursuant to those statutes. One portion of a site or facility may be regulated under a different statutory authority than other portions of that site or facility. When necessary, the department will, to the best of its ability, facilitate coordination between the regulatory programs involved.

(6) The department may take any action within the context of regulatory programs established in statutes or rules outside this chapter, if those actions are necessary to protect public health, welfare or safety or prevent a damaging effect on the environment for present and future uses, whether or not a soil cleanup standard has been adopted under this chapter.

(7) Nothing in this chapter authorizes an impact on soil quality that would cause a violation of a groundwater quality standard contained in ch. NR 140, an impact on soil quality or groundwater quality that would cause a violation of a surface water quality standard

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

contained in chs. NR 102 to 106 or an impact on soil quality that would cause a violation of an air quality standard contained in chs. NR 400 to 499.

History: Cr. Register, March, 1995, No. 471, eff. 4-1-95; cr. (1) (d), am. (2); Register, February, 1996, No. 482, eff. 3-1-96; emerg. am. (1) (intro.), cr. (1m), eff. 5-18-00; am. (1) (intro.), cr. (1m), Register, January, 2001, No. 541, eff. 2-1-01.

NR 720.03 Definitions. In this chapter:

(1) "Aquifer" means a saturated subsurface geological formation of rock or soil.

(2) "Contaminant of concern" means a hazardous substance that is present at a site or facility in such concentrations that the contaminant poses an actual or potential threat to human health, safety or welfare or the environment based upon:

(a) The toxicological characteristics of the hazardous substance that influence its ability to adversely affect human health or the environment relative to the concentration of the hazardous substance at the site or facility;

(b) The chemical and physical characteristics of the hazardous substance which govern its tendency to persist in the environment and the chemical, physical and biological characteristics at the site or facility which govern the tendency for the hazardous substance to persist at the site or facility;

(c) The chemical and physical characteristics of the hazardous substance which govern its tendency to move into and through environmental media;

(d) The naturally occurring background concentrations of the hazardous substance;

(e) The thoroughness of the testing for the hazardous substance at the site or facility;

(f) The frequency that the hazardous substance has been detected at the site or facility; and

(g) Degradation by-products of the hazardous substance.

(3) "Cumulative excess cancer risk" means the upper bound on the estimated excess cancer risk associated with exposure to multiple hazardous substances or multiple exposure pathways.

(4) "Direct contact" means human exposure to substances in soil through inhalation of particulate matter or incidental ingestion of soil.

Note: The definition of direct contact will be expanded in future revisions to include human exposures by inhalation of vapors and dermal absorption.

(5) "Hazard index" means the sum of 2 or more hazard quotients for multiple hazardous substances or multiple exposure pathways.

(6) "Hazard quotient" means the ratio of the exposure of a single hazardous substance over a specified time period to a reference dose, or reference concentration where appropriate, for that hazardous substance derived for a similar exposure period.

Note: Hazard quotients and the hazard index are measures of noncarcinogenic risk.

(7) "Incidental ingestion of soil" means ingestion of soil by humans as a result of normal hand-to-mouth behaviors.

(8) "Inhalation of particulate matter" means inhalation by humans of air with contaminated soil particles less than 10 microns in diameter.

(9) "Limit of detection" means the lowest concentration level that can be determined to be statistically different from a blank.

Note: This definition of "limit of detection" is consistent with ss. NR 140.05 (12) and 149.03 (15).

(10) "Limit of quantitation" means the lowest concentration for an analytical test method and sample matrix at which the quantity of a particular substance can be measured with a stated degree of confidence.

(11) "Pathway" means the route a substance takes in traveling to a receptor or potential receptor or the specific portal of entry, such as lungs, skin or digestive tract, the substance takes to potentially express its toxic effect, or both.

Note: The food chain pathway for cadmium, for example, refers to cadmium being taken up in plant tissue and the plant tissue being ingested by an organism.

(12) "Responsible parties" means:

(a) Persons who are required to address soil contamination under s. 292.31, Stats., or who agree to address soil contamination in a contract entered into under s. 292.11, Stats.

(b) Owners and operators of solid waste facilities that are subject to regulation under ch. NR 508;

(c) Owners and operators of hazardous waste facilities that are subject to the closure requirements of s. 291.29, Stats., or ch. NR 685 or the corrective action requirements of s. 291.37, Stats., or s. NR 635.17 or where the department has imposed special requirements where a discharge has occurred under s. NR 600.07; and

(d) Owners and operators of wastewater lagoons, storage structures or treatment structures that are abandoned and are subject to regulation under s. NR 110.09, 213.07 or 214.08.

(13) "Restricted access areas" means land immediately adjacent to highways or railroad right-of-ways, where the presence of structural controls, such as fencing, has eliminated pedestrian ingress by the public.

(14) "Risk" means the probability that a hazardous substance, when released to the environment, will cause adverse effects in exposed humans or other biological receptors.

History: Cr. Register, March, 1995, No. 471, eff. 4-1-95.

NR 720.05 General. (1) Responsible parties shall select and implement a remedial action to address soil contamination when, after any of the following investigations has been completed, information collected during the investigation indicates that a remedial action to address soil contamination is necessary to achieve compliance with the requirements of this chapter:

(a) Site investigation report developed in accordance with ch. NR 716 at sites or facilities subject to regulation under s. 292.11 or 292.31, Stats.

(b) Solid waste in-field conditions report prepared in accordance with the requirements of s. NR 508.04 (4).

(c) Investigation done under a hazardous waste closure plan or a RCRA facility investigation report, developed in accordance with the requirements of ch. NR 685 or s. NR 635.17 or 600.07.

(d) Investigation done under a wastewater facility, structure or system abandonment plan developed in accordance with the requirements of s. NR 110.09 (2) (r), 213.07 or 214.08.

Note: Remedial actions at some types of sites or facilities, such as the abandonment of wastewater lagoons, may only have to comply with ch. NR 720 and not other requirements in the NR 700 series, such as the minimum site investigation requirements in ch. NR 716. In this case, the department or responsible parties may choose to use the other chapters of the NR 700 rule series as guidance for complying with ch. NR 720.

(2) Remedial actions conducted by responsible parties to address soil contamination shall be designed and implemented to restore the contaminated soil to levels that, at a minimum, meet the soil cleanup standards for the site or facility determined in accordance with this chapter.

(3) If all soil contaminant concentrations meet applicable soil cleanup standards after a remedial action is completed, the department may not require further remedial action for soils, unless the department determines that the residual soil contamination:

(a) Presents a threat to public health, safety or welfare or the environment at the site or facility;

(b) Will cause a violation of a groundwater quality standard contained in ch. NR 140;

(c) Will cause a violation of a surface water quality standard contained in chs. NR 102 to 106; or

(d) Will cause a violation of an air quality standard contained in chs. NR 400 to 499.

History: Cr. Register, March, 1995, No. 471, eff. 4-1-95.

NR 720.07 Procedures for establishing soil cleanup standards applicable to a site or facility. (1) GENERAL. (a) Responsible parties shall use information from the sources listed in s. NR 720.05 (1) to determine the residual contaminant levels or performance standards for each exposure or migration pathway of con-

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

cern for each soil contaminant of concern at a site or facility in accordance with ss. NR 720.09 to 720.19.

(b) In addition to meeting the requirements of par. (c), responsible parties shall establish the soil cleanup standard for each soil contaminant of concern at the site or facility as:

1. The residual contaminant level which is the lowest concentration of those determined in accordance with the requirements of ss. NR 720.09 to 720.19 (3); or

Note: Numeric residual contaminant levels are determined separately for each exposure or migration pathway of concern at a site. These residual contaminant levels are not the soil cleanup standard for the site. The soil cleanup standard for the site is determined by selecting the lowest concentration from among the individual residual contaminant levels determined for each pathway.

2. A performance standard determined in accordance with s. NR 720.19 (2).

(c) In addition to meeting the requirements of par. (b), a soil cleanup standard developed under this chapter shall comply with the following requirements:

1. Residual soil contamination at the site or facility shall not adversely affect surface water;

2. Residual soil contamination at the site or facility shall not adversely affect a sensitive environment; and

3. Residual soil contamination at the site or facility shall not concentrate through plant uptake and adversely affect the food chain.

Note: It is the department's intention to adopt in the future soil cleanup standards based on protection of human food chain exposures, protection of surface water quality and protection of terrestrial ecosystems after exposure assumptions and methods have been developed to allow the department to calculate soil cleanup standards for these pathways of exposure. Responsible parties are required by ss. NR 720.07 (2) and 720.19 (6) to consider human food chain exposures, the protection of surface water quality and the protection of terrestrial ecosystems, if these pathways are of concern, when determining a residual contaminant level at a site or facility.

(2) COMPLIANCE WITH SOIL CLEANUP STANDARDS. (a) Contaminant concentrations in soil samples shall be determined using a department-approved and appropriate analytical method and reported on a dry weight basis. An appropriate analytical method shall have limits of detection or limits of quantitation, or both, at or below soil cleanup standards where possible. Responsible parties shall report the limit of detection and the limit of quantitation with sample results. The department may require that supporting documentation for the reported limit of detection and limit of quantitation be submitted.

(b) If a soil contaminant concentration in a sample exceeds the soil cleanup standard at or above the limit of quantitation for that soil contaminant, the soil cleanup standard shall be considered to have been exceeded.

(c) If a soil cleanup standard for a soil contaminant is between the limit of detection and the limit of quantitation, the soil cleanup standard shall be considered to be exceeded if the soil contaminant concentration is reported at or above the limit of quantitation.

(d) The following applies when a soil cleanup standard for a soil contaminant is below the limit of detection:

1. If a soil contaminant is not detected in a sample, the soil cleanup standard shall not be considered to have been exceeded.

2. If a soil contaminant is reported above the limit of detection but below the limit of quantitation, the soil cleanup standard shall be considered to have been exceeded if the presence of that soil contaminant has been confirmed by the use of an appropriate analytical method.

History: Cr. Register, March, 1995, No. 471, eff. 4-1-95.

NR 720.09 Determination of residual contaminant levels based on protection of groundwater. (1) CRITERIA AND PROCESS USING GENERIC RESIDUAL CONTAMINANT LEVELS. If all of the following criteria are met, responsible parties may use one of the methods in sub. (3) and, where applicable, the standards in sub. (4) to determine residual contaminant levels based on groundwater protection for a site or facility:

(a) An investigation has been conducted and completed in accordance with applicable administrative rules, as specified in s. NR 720.05 (1);

(b) The contaminants of concern are listed in Table 1, except that at sites or facilities with petroleum contamination where gasoline range organics (GRO) or diesel range organics (DRO), or both, are the only contaminants of concern present other than contaminants listed in Table 1, the standards in sub. (4) (a) may be used for non-specific GRO or DRO contamination in addition to the methods in sub. (3) which are applicable to contaminants listed in Table 1;

(c) The horizontal and vertical degree and extent of contamination is defined;

(d) The vertical distance from the base of the contaminated soil to carbonate bedrock (limestone or dolostone) or fractured bedrock is one meter (3.28 feet) or greater;

(e) The vertical thickness of the residual soil contamination is 6 meters (19.69 feet) or less; and

(f) None of the residual contaminants or combinations of residual contaminants at the site or facility are known to contribute to facilitated transport or cosolvent effects.

Note: In some cases, a contaminant or combination of contaminants may contribute to an increased potential for migration of contaminants to groundwater by facilitated transport or by acting as a solvent for other contaminants, which would make the use of the values in Table 1 inappropriate. An example of facilitated transport might be polychlorinated biphenyls (PCBs) in the presence of an oily phase. An example of cosolvency might be polycyclic aromatic hydrocarbons (PAHs) in the presence of alcohols, where the alcohol acts to increase the solubility of the PAHs.

Note: If a site or facility meets the criteria in sub. (1), responsible parties are not required to use the methods for generic residual contaminant levels in sub. (3). The procedure in s. NR 720.19 may be used to determine site-specific soil cleanup standards even when the site or facility meets the criteria in sub. (1).

(2) SITE-SPECIFIC PROCESS. If any of the criteria in sub. (1) are not met, responsible parties shall use the procedure in s. NR 720.19 to determine soil cleanup standards specific to a site or facility based on groundwater protection.

(3) METHODS FOR DETERMINING GENERIC RESIDUAL CONTAMINANT LEVELS. Responsible parties may select one of the following methods to determine residual contaminant levels based on groundwater protection for sites or facilities that meet all of the criteria in sub. (1) in addition to meeting the requirements of sub. (4), if applicable:

(a) *Method 1.* Responsible parties may use the residual contaminant levels based on protection of groundwater listed for each substance in Table 1.

(b) *Method 2. 1.* Responsible parties may determine the residual contaminant levels based on protection of groundwater using the baseline concentration for each substance listed in Table 1 multiplied by a groundwater dilution factor specific to the site or facility determined using parameter values from the site or facility determined in accordance with subd. 2. and a groundwater mixing zone depth of 5 feet (152.4 cm) in the following equation:

$$DF = 1 + \frac{K \times I \times d}{R \times l}$$

Where:

- DF = groundwater dilution factor,
- K = hydraulic conductivity (cm/day),
- I = hydraulic gradient (cm/cm)
- d = depth of groundwater mixing zone (cm)
- R = average groundwater recharge rate (cm/day), and
- l = horizontal extent of contaminated soil parallel to the hydraulic gradient (cm).

2. Parameter values specific to the site or facility shall be determined as follows:

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

a. Hydraulic conductivity shall be determined as the geometric mean of values determined from appropriate aquifer tests. Appropriate aquifer tests may include slug tests and pumping tests, and shall be properly performed using accepted practices.

b. Hydraulic gradient shall be determined using water level measurements from a minimum of 3 groundwater monitoring wells whose screens intersect the same hydrogeologic unit using the procedures specified in s. NR 716.13 (8). In cases where the magnitude of the hydraulic gradient is known to vary, an average value shall be used.

Note: Section NR 716.13 (8) requires that water levels be measured and recorded to the nearest 0.01 foot prior to obtaining a groundwater sample from the well.

c. Horizontal extent of contaminated soil parallel to the hydraulic gradient shall be determined as the maximum lateral extent from the information listed in s. NR 720.05 (1) and direction of the hydraulic gradient determined in subd. 2. b. In cases where the direction of the hydraulic gradient is known to vary, the longest appropriate dimension shall be used.

d. Average groundwater recharge rate shall be determined using an appropriate method or a default value of 0.07 cm/day.

Note: The default value of 0.07 cm/day is equivalent to an average annual recharge rate of 10 inches/year (25.4 cm/year).

Note: Average groundwater recharge rate can be approximated from the infiltration rate less the evapotranspiration rate. Appropriate methods may include the review of literature sources applicable to the site or facility or the use of field measurements, analytical solutions for estimating infiltration rate combined with analytical or empirical equations for estimating of evapotranspiration, or water balance approaches, among others. It is preferable to overestimate the average groundwater recharge rate rather than underestimate it.

Note: In some cases, use of Method 2 will yield residual contaminant levels lower than those for Method 1. In such cases, the residual contaminant level for Method 1 can be used.

(4) PETROLEUM CONTAMINATION. (a) *Generic residual contaminant levels.* 1. For sites or facilities with petroleum contamination where subd. 2. is not applicable, the soil cleanup standard for gasoline range organics (GRO) or diesel range organics (DRO) is a concentration in soil that may not exceed 100 milligrams per kilogram for either GRO or DRO.

2. For sites or facilities with petroleum contamination where contaminated soils and soils below the contaminated soil for a depth of 3 meters have a hydraulic conductivity of 1×10^{-6} cm/s or less, the soil cleanup standard for gasoline range organics (GRO) or diesel range organics (DRO) is a concentration in soil that may not exceed 250 milligrams per kilogram for either GRO or DRO.

Note: Milligrams per kilogram (mg/kg) is equivalent to parts per million (ppm) in soil.

(b) *Site-specific determination.* For sites or facilities with petroleum contamination where the concentration of gasoline range organics or diesel range organics, or both, is greater than the concentration specified in par. (a), Table 1 may be used to determine the residual contaminant levels for the compounds listed in Table 1 and soil cleanup standards for gasoline range organics and diesel range organics may be determined using the procedure in s. NR 720.19.

Table 1
Baseline Concentrations, Dilution Attenuation Factors and
Residual Contaminant Levels Based on Protection of Groundwater

Substance	Baseline Concentration $\mu\text{g}/\text{kg}$	Dilution Attenuation Factor	Residual Contaminant Level $\mu\text{g}/\text{kg}$
Benzene	0.093	59	5.5
1,2Dichloroethane	0.041	120	4.9
Ethylbenzene	42	70	2900
Toluene	18	81	1500
Xylenes (total)	47	87	4100

Note: Micrograms per kilogram ($\mu\text{g}/\text{kg}$) is equivalent to parts per billion (ppb) in soil. Soil concentrations are on a dry weight basis.

Note: The residual contaminant levels for Method 1 listed in Table 1 represent concentrations of contaminants that can remain in soil at a site and not cause a viola-

tion of a ch. NR 140 preventive action limit in groundwater. These residual contaminant levels are based on the baseline concentration for a substance multiplied by the dilution attenuation factor for that substance listed in Table 1.

Note: The residual contaminant levels in Table 1 are based on protection of groundwater. These concentrations of hazardous substances in soil may not be protective of other pathways of concern.

History: Cr. Register, March, 1995, No. 471, eff. 4-1-95.

NR 720.11 Determining residual contaminant levels based on protection of human health from direct contact with contaminated soil. (1) LAND USE CLASSIFICATION. (a) Responsible parties shall determine an appropriate land use classification for the site or facility in compliance with pars. (b) to (d), unless otherwise directed by the department.

(b) Responsible parties shall classify the land use of a site or facility as non-industrial unless all of the following criteria are met:

1. The site or facility is currently zoned for, or otherwise officially designated for, industrial use.

Note: A site or facility may be officially designated for industrial use by the issuance of a conditional use or special exception permit that allows an industrial use of that site or facility in a non-industrial zoning district or by the designation of an area as industrial in a county development plan or a municipal master plan, among other means.

2. The site or facility is expected to be used for industrial purposes due to zoning, statutory or regulatory restrictions, comprehensive plans, adjacent land use or other relevant factors.

3. More stringent residual contaminant levels for soil are not necessary to protect public health on or off the site or facility.

Note: Situations where s. NR 720.11 (1) (b) 3. would apply include site or facilities which could otherwise be classified as industrial, but where proximity to a nonindustrial land use, such as residential housing located across the street, makes a nonindustrial classification more appropriate.

(c) The land use of a site or facility may be classified as industrial if all of the criteria in par. (b) are met and if a deed restriction which meets the requirements of s. NR 726.05 (8) is recorded within 30 days after remedial action is initiated at the site or facility.

(d) The industrial column in Table 2 may be applied to restricted access areas unless more stringent residual contaminant levels are necessary to protect public health on or off the site.

Note: A deed restriction must be recorded if soil cleanup levels based on industrial exposure are used.

(2) CRITERIA AND PROCESS FOR USING GENERIC RESIDUAL CONTAMINANT LEVELS. If all of the following criteria are met for a site or facility, responsible parties may use the residual contaminant levels based on protection from direct contact listed for each substance in Table 2 which are appropriate for the site or facility in accordance with the land use classification determined in sub. (1), unless sub. (3) or (5), or both, applies:

(a) An investigation has been conducted in accordance with applicable administrative rules, as specified in s. NR 720.05 (1);

(b) The contaminants of concern present at the site or facility are listed in Table 2; and

Note: For example, at a site where soils are contaminated with diesel fuel, polynuclear aromatic hydrocarbon (PAH) compounds are present and may be considered contaminants of concern. With the exception of naphthalene, PAH compounds are generally only of concern for direct contact due to their relatively low migration potential.

(c) The horizontal and vertical degree and extent of contamination is defined.

Note: If a site or facility meets the criteria in s. NR 720.11 (2) responsible parties are not required to use the procedure for generic residual contaminant levels in sub. (2). The procedure in s. NR 720.19 may be used to determine site-specific soil cleanup standards even when the site or facility meets the criteria in sub. (2).

(3) CUMULATIVE RISK. (a) The cumulative excess cancer risk may not exceed 1×10^{-5} and the hazard index for non-carcinogens may not exceed one for the contaminants of concern at a site or facility.

(b) Risks for carcinogens and for non-carcinogens are presumed to be additive within each category. The residual contaminant levels in Table 2 shall be prorated downward to keep the cumulative risk below the levels specified in par. (a).

Note: The residual contaminant levels for non-industrial land use in Table 2 are based on an excess cancer risk of $1/10$ for carcinogens or a hazard quotient of 0.2 for

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

noncarcinogens. These levels are intended to be analogous with the preventive action limits in ch. NR 140.

(4) **SITE-SPECIFIC PROCESS.** Except as provided in sub. (5), if one or more of the criteria in sub. (2) are not met, responsible parties shall use the procedure in s. NR 720.19 to determine soil cleanup standards specific to a site or facility based on protection from direct contact.

(5) **EXCEPTIONS.** (a) For sites contaminated with petroleum products discharged from petroleum storage tanks:

1. If residual concentrations of benzene and 1,2-dichloroethane are below the soil contaminant concentrations in Table 2 in s. NR 746.06 (2) and residual concentrations of ethylbenzene, toluene, xylene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and naphthalene are below the soil screening levels in Table 1 in s. NR 746.06 (2), responsible parties are not required to satisfy the requirements in s. NR 720.19 and are not required to determine a site-specific direct contact residual contaminant level or site-specific soil cleanup standard for these substances for the purpose of complying with the provisions in s. NR 720.07 (1)(a) and (b).

2. If the site does not meet the requirements of subd. 1 but meets the risk screening criteria in s. NR 746.06 (2) (b) and (c), the responsible party shall obtain prior approval from the agency with administrative authority for the site before taking any action to address a direct contact threat other than the use of a performance standard under s. NR 720.19 (2).

(b) If the background concentration for a substance in soil at a site or facility is higher than the residual contaminant level for that substance listed in Table 2 or determined using the procedure in s. NR 720.19 (3), the background concentration in soil may be used as the residual contaminant level for that substance. The background concentration for a substance in soil shall be determined using a department-approved and appropriate method.

Note: Naturally occurring background concentrations of arsenic in soil, for example, may be higher than the residual contaminant level for arsenic listed in Table 2. In such instances, the naturally occurring background concentration should be used as the soil cleanup level.

Table 2
Residual Contaminant Levels Based On
Human Health Risk From Direct Contact Related To Land Use
(milligrams per kilogram)

Substance	Non-		Basis
	Industrial	Industrial	
Arsenic	0.039	1.6	cancer
Cadmium	8	510	noncancer
Chromium, hexavalent	14	200	cancer
Chromium, trivalent	16,000	NA	noncancer
Lead	50	500	noncancer

NA= Not applicable

Note: Milligrams per kilogram (mg/kg) is equivalent to parts per million (ppm) in soil. Soil concentrations are on a dry weight basis.

Note: The residual contaminant levels in Table 2 are based on protection of human health from direct contact through ingestion of soil or inhalation of particulate matter. These concentrations of hazardous substances in soil may not be protective of other pathways of concern. The definition of direct contact will be expanded in future revisions to include human exposures by inhalation of vapors and dermal absorption. In addition, these levels may be higher than those which would be characteristic of hazardous waste when tested using the toxicity characteristic leaching procedure (TCLP), U.S. EPA Method 1311.

History: Cr. Register, March, 1995, No. 471, eff. 4-1-95; am. (4) and (5), Register, January, 2001, No. 541, eff. 2-1-01.

NR 720.19 Procedure for determining soil cleanup standards specific to a site or facility. (1) **GENERAL.** (a) Responsible parties shall propose a soil cleanup standard specific to a site or facility in accordance with the requirements of this section when required in ss. NR 720.09 to 720.11 or if it is determined that it is not practicable to achieve the residual contaminant level for a soil

contaminant specified in ss. NR 720.09 to 720.11 using on-site remedial action or, if the responsible party chooses to utilize off-site remedial actions, using off-site remedial action or a combination of on-site and off-site remedial actions at a site or facility.

(b) Responsible parties shall establish a soil cleanup standard for a specific soil contaminant or physical location at a site or facility using one of the methods in sub. (2) or (3).

(2) **PERFORMANCE STANDARD.** If selected, a performance standard shall be established for a remedial action so that the remedial action is operated and maintained, in compliance with chs. NR 722 and 724 when those chapters are applicable to the site or facility, until the lowest concentration that is practicable is achieved or a permanent engineering control is maintained, or both, so that the residual contaminants left in the soil do not pose a threat to public health, safety and welfare or the environment.

Note: Examples of performance standards include the allowable rate of infiltration by soil contaminants into the groundwater after a membrane liner has been installed, or the rate or percentage of removal efficiency offered by an in-situ treatment system at a specific site or facility. At a site or facility where an engineering control is being considered for selection, in accordance with the requirements of ch. NR 722, an engineering control may be selected even though the soil contaminants exceed a residual contaminant level.

(3) **RESIDUAL CONTAMINANT LEVELS SPECIFIC TO A SITE OR FACILITY.** If selected, residual contaminant levels specific to a site or facility shall be established that are protective of public health, safety and welfare and the environment and restore the environment to the lowest concentration practicable, in accordance with the requirements of sub. (4) to (6). Even in cases where the procedure in sub. (3) is selected by the responsible party, the procedure in sub. (2) may be used when the residual contaminant levels established under sub. (3) are not practicable to achieve.

(4) **PROTECTION OF GROUNDWATER.** (a) Residual contaminant levels for soil based on protection of groundwater shall be developed using the preventive action limits (PALs) established in ch. NR 140 or using procedures consistent with the methodology in ss. 160.13 and 160.15, Stats., and the criteria in s. NR 722.09 (2) (b) 2. when there is no preventive action limit as the target concentrations in groundwater.

Note: In developing a residual contaminant level, any relevant information shall be considered, including public welfare concerns for groundwater, such as taste and odor.

(b) Responsible parties shall use one or more of the methods listed in this paragraph based on scientifically valid procedures that are subject to department review and approval and site-specific geological, physical and chemical conditions to establish residual contaminant levels.

1. A contaminant transport and fate model.

2. Leaching tests appropriate for the site or facility in both application and extent.

3. Any other appropriate method approved by the department for that specific site or facility, or other appropriate method suggested in department guidance.

(5) **PROTECTION OF HUMAN HEALTH FROM DIRECT CONTACT.** (a) **General.** Residual contaminant levels for soil based on protection of human health from direct contact shall be developed:

1. For individual compounds using the excess cancer risk of 1×10^{-6} and the hazard quotient for non-carcinogens of one; and

2. So that the cumulative excess cancer risk will not exceed 1×10^{-5} and the hazard index for non-carcinogens will not exceed one for the site or facility.

3. Risks for carcinogens and for non-carcinogens are presumed to be additive within each category, unless there is specific information that demonstrates that an alternative approach is more appropriate.

4. If toxicological indices for both carcinogenic and non-carcinogenic end points exist for a substance, both shall be evaluated and the value that generates the lowest residual contaminant level shall be used for the site or facility.

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

(b) *Methods and procedures.* Responsible parties shall determine a residual contaminant level to protect public health from direct contact with soil contamination using scientifically valid procedures and toxicological values approved by the department and the default exposure assumptions identified in par. (c) or alternative assumptions specifically approved by the department in writing.

Note: The department will generally consider toxicological values in the following order: recommendations of the department of health and social services; indices contained in U.S. EPA's Integrated Risk Information System (IRIS); indices contained in U.S. EPA's Health Effects Assessment Summary Tables (HEAST); recommendations of U. S. EPA's Environmental Criteria and Assessment Office; indices withdrawn from IRIS; indices withdrawn from HEAST; and other pertinent toxicological information.

(c) *Default exposure assumptions.* 1. Non-carcinogens. When the contaminant is not a carcinogen, the following default exposure assumptions shall be used:

a. When the land use of a site or facility is classified as non-industrial, in accordance with s. NR 720.11 (1), incidental ingestion of soil shall be assumed to occur at the rate of 200 mg of soil per day for a 15 kg child for 350 days each year and inhalation of particulate matter shall be assumed to occur at the inhalation rate of 20 m³ of air per day with a concentration of 1.4 µg/m³ of contaminated soil particles less than 10 µm in diameter for 350 days each year, for 6 years.

b. When the land use of a site or facility is classified as industrial, in accordance with s. NR 720.11 (1), incidental ingestion of soil shall be assumed to occur at the rate of 100 mg of soil per day for a 70 kg adult worker for 250 days each year and inhalation of particulate matter shall be assumed to occur at the inhalation rate of 24 m³ of air per day with a concentration of 1.4 µg/m³ of contaminated soil particles less than 10 m in diameter for 250 days each year, for 25 years.

2. Carcinogens. When the contaminant is a carcinogen, the following default exposure assumptions shall be used:

a. When the land use of a site or facility is classified as non-industrial, in accordance with s. NR 720.11 (1), incidental ingestion of soil shall be assumed to occur at the rate of 200 mg of soil per day for 350 days each year for 6 years for a 15 kg child and the rate of 100 mg per day for 350 days each year for 24 years for a 70 kg adult and inhalation of particulate matter shall be assumed to occur at the inhalation rate of 20 m³ of air per day with a concentration of 1.4 µg/m³ of contaminated soil particles less than 10 µm in diameter for 350 days each year for 30 years, during a 70 year lifetime.

b. When the land use of a site or facility is classified as industrial, in accordance with s. NR 720.11 (1), incidental ingestion of soil shall be assumed to occur at the rate of 100 mg of soil per day for 250 days each year for a 70 kg adult worker and inhalation of particulate matter shall be assumed to occur at the inhalation rate of 24 m³ of air per day with a concentration of 1.4 µg/m³ of contaminated soil particles less than 10 µm in diameter for 250 days each year, for 25 years during a 70 year lifetime.

Note: Department approval of alternative exposure assumptions for a site or facility will be based on consultation with the department of health and social services.

(6) **OTHER PATHWAYS OF CONCERN.** Responsible parties shall consider human food chain, surface water quality and terrestrial ecosystem pathways of exposure, when those pathways of exposure are of concern at a site or facility.

Note: In some cases, the potential for contaminant migration or exposure to contamination through other pathways may be of concern at a site or facility. These situations could include contaminated soil in close proximity to a surface water where the potential for runoff from the site or facility to cause an impact on surface water quality exists or contaminated soil where potential for bioaccumulation through the food chain resulting in adverse impacts to human health or terrestrial ecosystems exists. Section NR 720.19 (6) requires responsible parties to establish appropriate residual contaminant levels protective of these pathways when necessary.

(7) **SUBMITTALS.** (a) Unless otherwise directed by the department, submittals under this section shall be included in the site investigation report or the draft remedial action options report required under s. NR 700.11 (2) (b).

(b) Submittals to the department under this section shall include all of the following:

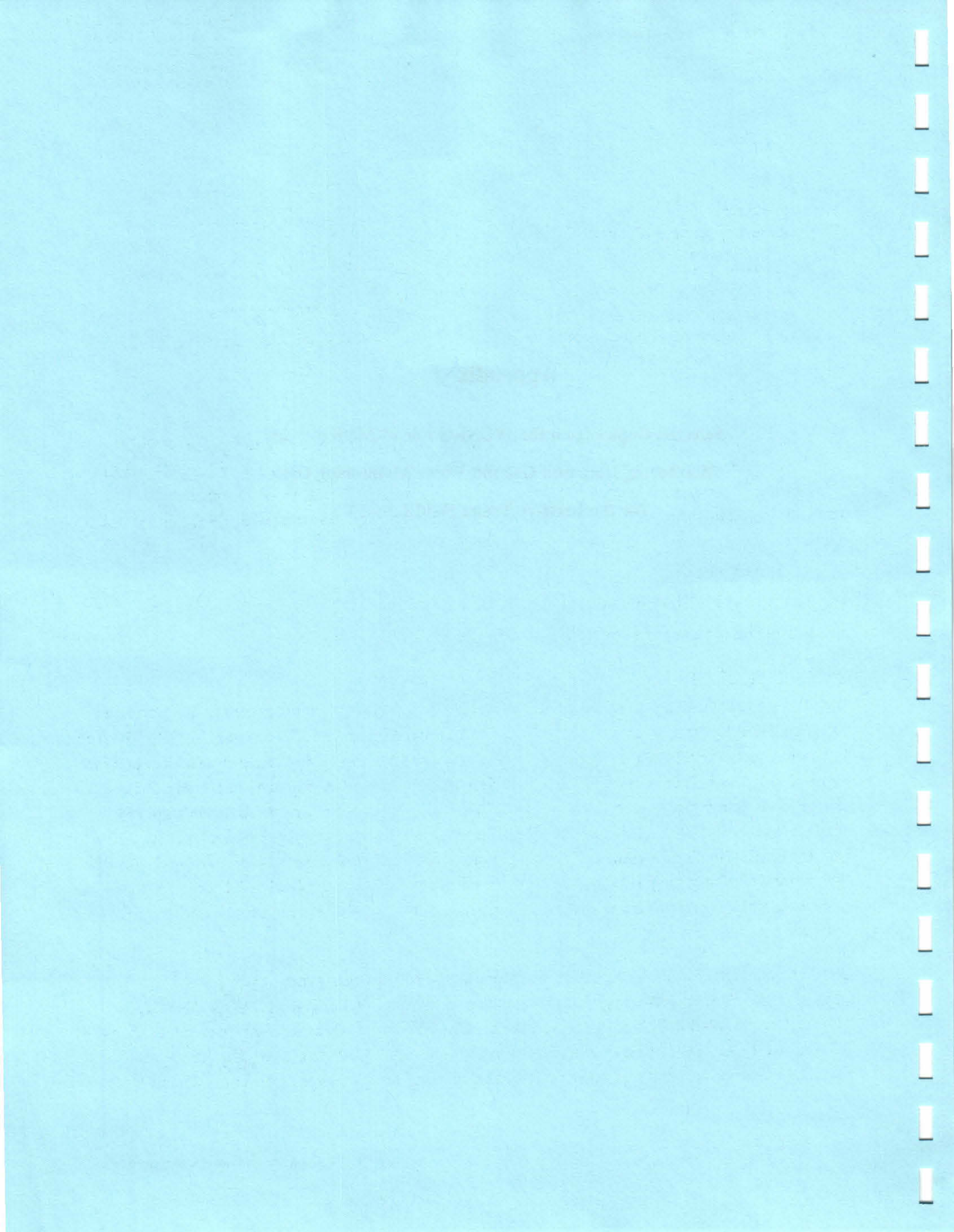
1. Complete background information and supporting documentation for the procedure to be used;
2. Documentation that the application of the procedure is valid for the site or facility under consideration;
3. Necessary data and documentation needed to fully evaluate the submittal; and
4. Legible copies of source documents or pertinent portions of source documents.

Note: The use of references to source documents alone in a submittal is generally not adequate for efficient department review. For example, background documentation for a given contaminant transport and fate model or articles in obscure publications may not be readily available or accessible to department staff. Considerable time can be spent in obtaining this documentation before a submittal can be reviewed. In order to facilitate department review of submittals, legible copies of entire source documents or the pertinent portions of source documents sufficient to evaluate the method or procedure used should be included with the submittal. The department will not purchase documents in order to review a particular submittal.

History: Cr. Register, March, 1995, No. 471, eff. 4-1-95; correction in (4) (a) made under s. 13.93 (2m) (b) 7., Stats., Register, February, 1997, No. 494.

Appendix J

Selected Copies from the WDNR's File of Methane Gas
Monitoring Data and Ground Water Monitoring Data
for the Inactive Truax Field Landfill

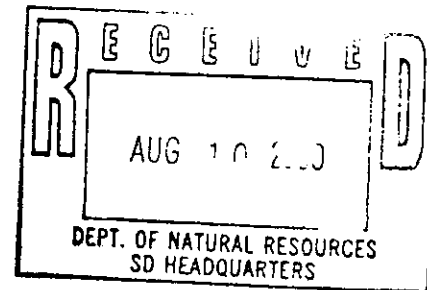




August 9, 2000

Ms. Barb Derflinger, P.G.
Hydrogeologist
Wisconsin Department of Natural Resources
101 South Webster Street, SW/3
Madison, WI 53707

**Subject: Monitoring Device Maintenance
Dane County Truax Landfill
Permit No. 3306**



Dear Ms. Derflinger:

On behalf of Dane County Regional Airport, RMT, Inc. (RMT), is presenting this proposal for the repair, abandonment, and replacement of several monitoring devices at the Truax Landfill, Madison, Wisconsin. This proposal is submitted in order to address Condition 8 in the Department's Conditional Plan Approval for Environmental Monitoring, dated November 18, 1999. The maintenance of the monitoring devices includes the following:

- Monitoring well replacement
- Gas probe repairs, abandonments, and replacements
- Surveying of new and repaired monitoring devices

Monitoring Wells

The documentation of the abandonment of monitoring well MW-2 was submitted to the Wisconsin Department of Natural Resources (WDNR) by BT², Inc., in a letter dated December 23, 1999. The well had been located within what eventually became a water retention basin. The proposed location for the replacement well, to be named MW-15, is shown on Figure 1. The replacement well will be designed and constructed according to ch. NR 141, and will include a 2-inch-I.D. Schedule 40 PVC well with a 10-foot, 10-slot PVC screen and an appropriate sand pack and boring seal, per ch. NR 141 requirements. The depth of the well will be determined at the time of installation. Well MW-15 will be screened similarly to well MW-2 as a water table observation well. Well MW-2 had a total depth of 57 feet below the ground surface and an average static water level of about 48 feet below ground surface.

BT² also noted in their December 23, 1999, letter that the protective casings were replaced and the grades of six existing monitoring wells were adjusted (wells MW-3, MW-3A, MW-11, MW-12A, MW-12B, and MW-12C) in December, so they need new reference elevation measurements. New well MW-15 will be surveyed for horizontal and vertical control, and the vertical control for the six adjusted wells will be surveyed after all device repairs and replacements as described in this letter

Ms. Barb Derflinger, P.G.
Wisconsin Department of Natural Resources
August 9, 2000
Page 2

have been completed. The well construction documentation for well MW-15 will also be provided to the Department.

Gas Probes

Based on field inspections and gas probe monitoring data, it has been noted that some of the gas probes require repair and/or replacement, and that some require relocation. Gas probes GP-11 and GP-19E (South) are damaged at the ground surface and need to be repaired. Gas probe GP-8, located northwest of the landfill near monitoring well nest MW-13, appears to be destroyed and will be replaced with GP-8R. Gas probe GP-15 was also destroyed during construction and will be replaced with GP-15R. Gas probes GP-15 and GP-16 appear to be located adjacent to, or within, the footprint of the landfill, which should explain the historical detections of methane along the landfill's southern side. RMT recommends abandoning these probes and replacing them with two monitoring points offset approximately 50 feet south of the limits of the landfill. The two replacement monitoring points would consist of existing gas probe GP-17 and proposed gas probe GP-16R (see Figure 1). A new gas probe GP-15R would be located due west of the southwestern corner of the landfill in the grass terrace adjacent to the road. The purpose of GP-15R will be to monitor for off-site gas migration relative to a new building proposed to be located due west of the probe (see Figure 1). RMT recommends replacing GP-16 with a new gas probe (called GP-16R) located 50 feet further south of the landfill. After monitoring these new gas probes for six months, the need for a gas migration assessment plan will be evaluated (see Condition 14 of the Department's November 18, 1999, conditional plan approval) and, if necessary, the plan will be submitted to the WDNR for review.

BT² noted in their December 23, 1999, letter that the protective casings were replaced and the grades of eight existing gas probes were adjusted (gas probes GP-1D, GP-2S, GP-2D, GP-4, GP-5, GP-10, GP-18, and GP-19W) in December, so they require new reference elevation measurements. The proposed replacement gas probes (GP-15, GP-8R, GP-15R, and GP-16R), along with the eight adjusted gas probes, will be surveyed after all device repairs and replacements as described in this letter have been completed. The probe construction documentation for the four new gas probes will be provided to the Department.

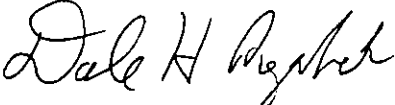
The information for the monitoring device abandonments, repairs, surveying, and replacements will be summarized in an updated Well Information Form (WIF) according to Wis. Adm. Code ch. NR 507.14(5)(1).

Ms. Barb Derflinger, P.G.
Wisconsin Department of Natural Resources
August 9, 2000
Page 3

The tasks described in this letter will be completed within approximately three weeks following contractor notification. Please call us if you have any questions.

Sincerely,

RMT, Inc.



Dale H. Rezabek, P.G., C.P.G.
Project Hydrogeologist



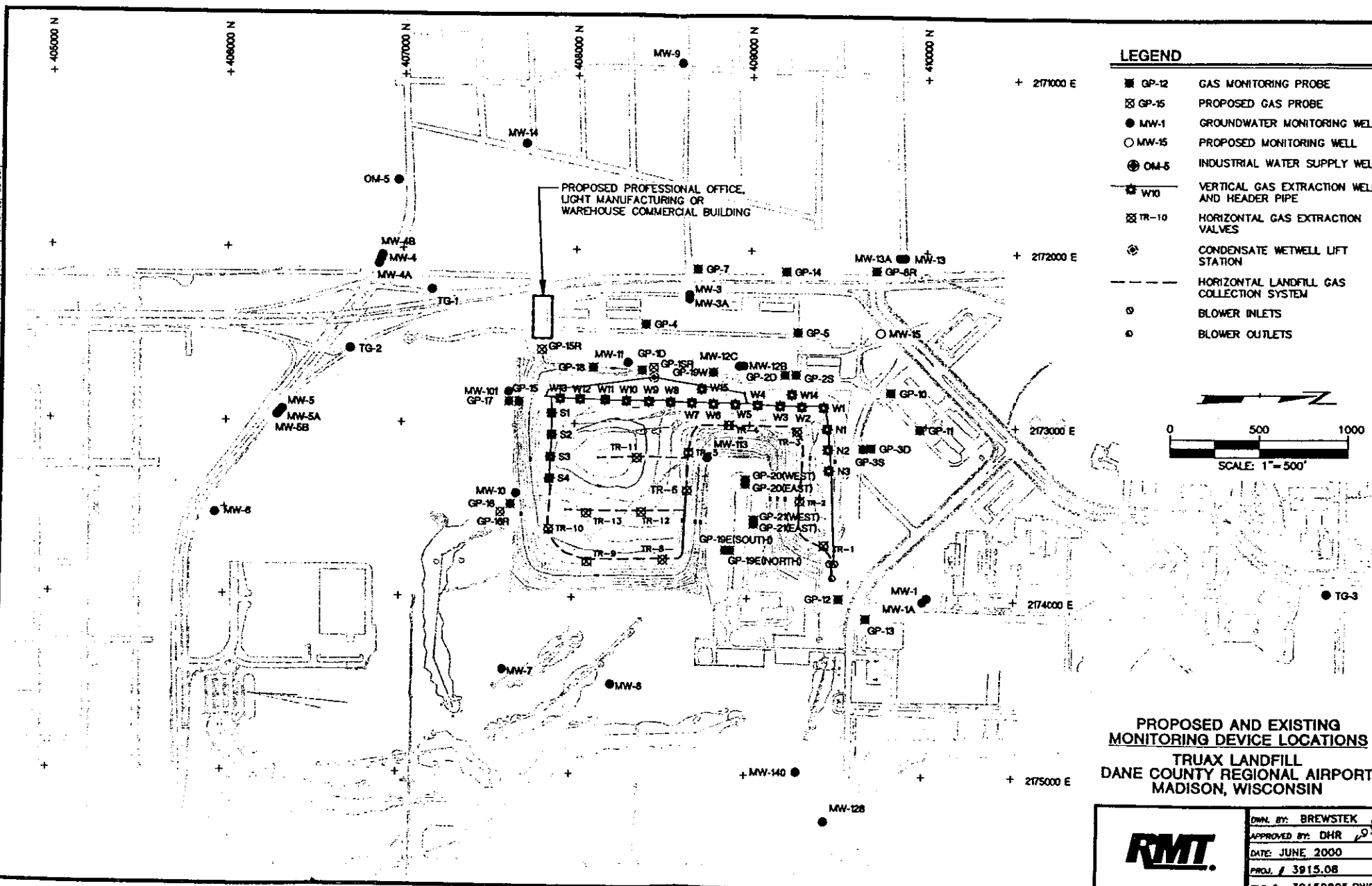
Curtis D. Madsen, P.E.
Project Manager

Attachments: Figure 1, Proposed and Existing Monitoring Device Locations

cc: Mark Harder, WDNR SCR
Mike Kirchner, Dane County Regional Airport

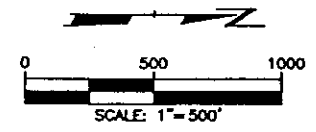
Drawing File = \\s:\proj\13\08\39150805.dwg
 User ID = BREWSTEK
 Plot File = c:\pilot\lmpo\000\39150805.plt
 Plot Table = c:\pilot\lmpo\000\39150805.tbl
 Plot Date = Mon Jun 19 15:23:49 2000
 Plotter = acad11x17
 Scale = 1:500,000,000
 Rotation = 0.000000
 Plot Date = Mon Jun 19 15:23:49 2000

Attached Text's: s:\d214; bmc; Rpt; Bmmt; LANDFILL; Border;



LEGEND

■ GP-12	GAS MONITORING PROBE
⊠ GP-15	PROPOSED GAS PROBE
● MW-1	GROUNDWATER MONITORING WELL
○ MW-15	PROPOSED MONITORING WELL
⊕ OM-5	INDUSTRIAL WATER SUPPLY WELL
⊙ W10	VERTICAL GAS EXTRACTION WELL AND HEADER PIPE
⊠ TR-10	HORIZONTAL GAS EXTRACTION VALVES
⊕	CONDENSATE WETWELL LIFT STATION
---	HORIZONTAL LANDFILL GAS COLLECTION SYSTEM
⊙	BLOWER INLETS
⊙	BLOWER OUTLETS



**PROPOSED AND EXISTING
 MONITORING DEVICE LOCATIONS**
TRUAX LANDFILL
DANE COUNTY REGIONAL AIRPORT
MADISON, WISCONSIN

RMT.	DRAWN BY: BREWSTEK
	APPROVED BY: DHR
	DATE: JUNE 2000
	PROJ. / 3915.08
	FILE / 39150805.DWG

FIGURE 1



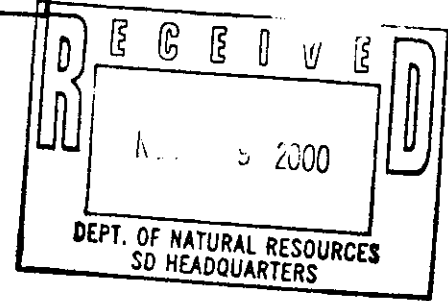
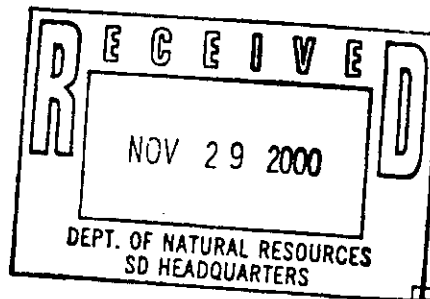
Integrated
Environmental
Solutions

744 Heartland Trail 53717-1934
P.O. Box 8923 53708-8923
Madison, WI
Telephone: 608-831-4444
Fax: 608-831-3334

November 22, 2000

Ms. Barb Derflinger, P.G.
Hydrogeologist
Wisconsin Department of Natural Resources
101 South Webster Street SW/3
Madison, WI 53707

**Subject: Environmental Monitoring
Second Quarter 2000 Results
Closed Dane County Truax Landfill**



Dear Ms. Derflinger:

Enclosed is a summary of the laboratory results for the second quarter groundwater sampling event for 2000, and the gas monitoring results for the second quarter (measurements recorded biweekly in April, May, and June 2000). The sampling for the second quarter was conducted by RMT, Inc. (RMT), on June 21 and 22, 2000. The third quarter sampling took place in September. A copy of this letter and a computer diskette containing the second quarter laboratory analytical results and gas monitoring results have been submitted to the Environmental Monitoring Data Section of the Bureau of Waste Management at the Wisconsin Department of Natural Resources (WDNR) Central Office in Madison. Groundwater samples were collected and gas probes were sampled according to the environmental monitoring plan in the Conditional Plan Approval letter dated November 18, 1999.

We have discovered that gas probe data from gas probes in the GP-01 through GP-21 series, collected by RMT during March, April, and May 2000, were inadvertently left out of our previous submittal on June 5, 2000. These additional data are included in this report. Gas monitoring data collected during this sampling event exhibit fewer detections and/or lower concentration detections of landfill gas, which indicate that the adjustments to the gas extraction system have resulted in increased efficiency.

Groundwater continues to flow to the northwest, and downward hydraulic gradients continue to be observed at well nests MW-3, MW-4, and MW-5. Table 1 presents a summary of the water quality indicator parameters that exceeded the current NR 140 Preventive Action Limits (PAL) and Enforcement Standards (ES). The indicator parameter results for samples collected and analyzed for the second quarter 2000 are generally similar to historic data for the site. The trends in the data indicate that there may be some impacts on groundwater quality in downgradient monitoring wells (monitoring wells MW-3, MW-3A, MW-11, MW-12B, and MW-12C), but that there are other potential sources in the area also contributing to the impacts, since some impacts are in sidegradient monitoring wells from the landfill (such as monitoring wells MW-1A, MW-4, MW-4A, MW-4B, MW-5, MW-5A, MW-5B).

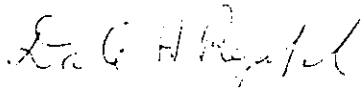
Ms. Barb Derflinger, P.G.
Wisconsin Department of Natural Resources
November 22, 2000
Page 2

In summary, water quality data collected by RMT during this period are interpreted to indicate that although the landfill has had an impact on groundwater quality near the landfill, there are other sources in the vicinity which make it difficult to separate the impacts and pinpoint which impacts are attributed specifically to the landfill.

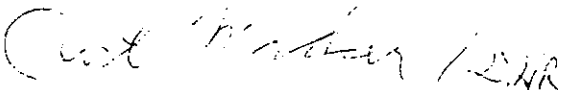
Please call us if you have any questions.

Sincerely,

RMT, Inc.



Dale H. Rezabek, P.G., C.P.G.
Hydrogeologist



Curtis D. Madsen, P.E.
Project Manager

Attachments: Table 1, Summary of NR 140 Exceedences - June 2000
Gas Probe Data (March, April, May, June)
June Monitoring Well Data

cc: Kathy Thompson, Environmental Monitoring Data Section, WDNR (letter w/ data diskette, data certification, and data tables)
Mark Harder, WDNR - SCR (letter w/ data tables only)
Mike Kirchner, DCRA (letter w/ data tables only)



GROUNDWATER MONITORING DATA CERTIFICATION

Note: Two data certification pages and two copies of any exceedance notification and explanation must be prepared for **each** license number included on the diskette. One copy of each must be mailed to the WDNR Central Office with the diskette; the second copies must be mailed to the WDNR Regional Office for the region in which the facility is located.

Check here to indicate that a copy of this page (and a copy of the exceedance notification letter, if any) was mailed to the DNR Regional Office.

The enclosed diskette contains data for the following facility or facilities:

<u>License No.</u>	<u>Facility ID No.</u>	<u>Facility Name</u>	<u>Sample Results for Month(s) of:</u>
03306	113183620	Dane County Truax Landfill	March 2000 ¹ April 2000 ² May 2000 ² June 2000 ³

¹ Gas probe data only, not included with previous submittals

² Gas probe and gas extraction sample data

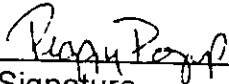
³ Monitoring well, gas probe, and gas extraction sample data

Check one of the following:

An exceedance notification and explanation *is attached*.

An exceedance notification *is not attached* because there are no exceedances to report.

To the best of my knowledge, the information reported and the statements made on this diskette and enclosures are true and correct. *Furthermore, per ss. NR 140.24(1)(a) and 507.30, Wisconsin Adm. Code, I have attached notification of enforcement standard, preventative action limit, or alternative concentration limit exceedances, if any, which includes a list of the wells at which the exceedances occurred and a preliminary analysis of the cause and significance of the concentration.*



Signature

September 6, 2000
Date

Database Specialist
Title

TABLE 1

DANE COUNTY TRUAX LANDFILL

PARAMETERS THAT EXCEED CURRENT REGULATORY STANDARDS

JUNE 2000

BEGINNING SEARCH DATE: 01-JUN-2000

ENDING SEARCH DATE: 30-JUN-2000

CHEMICAL PARAMETER	UNITS	NR140 PAL	NR140 ES	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS	EXCEEDANCE	WITHIN DMZ?
ARSENIC, DISSOLVED	UG/L	5	50	MW-004	21-JUN-2000	6.1	Q	PAL	
				MW-004A	21-JUN-2000	41		PAL	
				MW-004B	21-JUN-2000	6.3	Q	PAL	
				MW-005A	22-JUN-2000	39		PAL	
				MW-005B	21-JUN-2000	5.8	Q	PAL	
				MW-005B DUP	21-JUN-2000	5.3	Q	PAL	
				TG-01	21-JUN-2000	7.3	Q	PAL	
				TG-02	21-JUN-2000	6.7	Q	PAL	
CADMIUM, DISSOLVED	UG/L	.5	5	MW-003	22-JUN-2000	0.80	Q	PAL	
				MW-010	22-JUN-2000	2.3		PAL	Y
				OSCAR #5	22-JUN-2000	0.73	Q	PAL	
CHLORIDE	MG/L	125	250	MW-004	21-JUN-2000	420		ES	
				MW-004B	21-JUN-2000	260		ES	
				MW-005B	21-JUN-2000	300		ES	
				MW-005B DUP	21-JUN-2000	290		ES	
				MW-011	22-JUN-2000	920		PAL	Y
				MW-012B	22-JUN-2000	130		PAL	Y
IRON, DISSOLVED	UG/L	150	300	MW-004A	21-JUN-2000	490		ES	
				MW-004B	21-JUN-2000	310		ES	
				MW-005A	22-JUN-2000	300		ES	
				MW-005B	21-JUN-2000	3100		ES	
				MW-005B DUP	21-JUN-2000	3200		ES	
				MW-010	22-JUN-2000	310		PAL	Y
				OSCAR #5	22-JUN-2000	360		ES	
				TG-01	21-JUN-2000	1400		ES	
				TG-02	21-JUN-2000	750		ES	

TABLE 1

DANE COUNTY TRUAX LANDFILL

PARAMETERS THAT EXCEED CURRENT REGULATORY STANDARDS

JUNE 2000

BEGINNING SEARCH DATE: 01-JUN-2000

ENDING SEARCH DATE: 30-JUN-2000

CHEMICAL PARAMETER	UNITS	NR140 PAL	NR140 ES	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS	EXCEEDANCE	WITHIN DMZ?
LEAD, DISSOLVED	UG/L	1.5	15	TG-02	21-JUN-2000	3.5	Q	PAL	
MANGANESE, DISSOLVED	UG/L	25	50	MW-001A	21-JUN-2000	280		ES	
				MW-004B	21-JUN-2000	250		ES	
				MW-005	21-JUN-2000	630		ES	
				MW-005B	21-JUN-2000	110		ES	
				MW-005B DUP	21-JUN-2000	120		ES	
				MW-010	22-JUN-2000	470		PAL	Y
				MW-011	22-JUN-2000	280		PAL	Y
				MW-012B	22-JUN-2000	100		PAL	Y
				OSCAR #5	22-JUN-2000	55		ES	
				TG-01	21-JUN-2000	470		ES	
				TG-02	21-JUN-2000	84		ES	
NITROGEN, NITRATE + NITRITE	MG/L	2	10	MW-003	22-JUN-2000	7.5		PAL	
				MW-003 DUP	22-JUN-2000	7.3		PAL	
				MW-003A	22-JUN-2000	2.6		PAL	
				MW-004	21-JUN-2000	6.8		PAL	
				MW-005	21-JUN-2000	71		ES	
				MW-012B	22-JUN-2000	5.5		PAL	Y
				MW-012C	22-JUN-2000	2.0		PAL	Y
				TG-02	21-JUN-2000	2.0		PAL	

DANE COUNTY TRUAX LANDFILL
MONITORING WELL DATA
JUNE 2000

PARAMETER	UNITS	FIELD BLANK-1	MW-001	MW-001A	MW-003	MW-003 DUP	MW-003A
		21-JUN-2000 902183-013	21-JUN-2000 902183-001	21-JUN-2000 902183-002	22-JUN-2000 902213-002	22-JUN-2000 902213-004	22-JUN-2000 902213-003
COLOR, FIELD			GREY	CLEAR	TAR		CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM		653	860	1490		
DEPTH TO WATER	FEET		9.45	24.32	51.25		849
ODOR, FIELD			NONE	NONE	NONE		51.01
PH, FIELD	SU		7.25	7.36	6.94		NONE
TEMPERATURE	DEG C		13.1	12.9	13.8		7.35
TURBIDITY, FIELD			SLIGHT	NONE	VERY		13.8
WATER ELEVATION	FEET		848.98	834.01			NONE
ALKALINITY AS CaCO3	MG/L	14 A	290 A	320	530	520	350
CHLORIDE	MG/L	< 0.15	19	67	120	120	30
COD	MG/L	4.9 Q	2.9 Q	< 2.8	3.4 Q	4.5 Q	3.0 Q
HARDNESS AS CaCO3	MG/L	< 0.081	340	440	670	660	460
NITROGEN, NITRATE + NITRITE	MG/L	< 0.037	0.48	< 0.037	7.5	7.3	2.6
NITROGEN, TOTAL KJELDAHL	MG/L			0.49 Q			
PHOSPHORUS, SOLUBLE	MG/L			< 0.31			
SOLIDS, TOTAL DISSOLVED	MG/L	< 14	410	550	930	1100	680
SULFATE	MG/L	< 0.13	12	35	52	52	58
ARSENIC, DISSOLVED	UG/L	< 3.7	3.8 Q	4.5 Q	< 3.7	< 3.7	< 3.7
BARIUM, DISSOLVED	UG/L	< 0.92	38	230	140	140	7.3
CADMIUM, DISSOLVED	UG/L	< 0.36	< 0.36	< 0.36	0.80 Q	< 0.36	< 0.36
IRON, DISSOLVED	UG/L	< 16	< 16	35 Q	24 Q	19 Q	< 16
LEAD, DISSOLVED	UG/L	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2
MANGANESE, DISSOLVED	UG/L	< 0.26	0.43 Q	280	12	11	< 0.26

DANE COUNTY TRUAX LANDFILL
MONITORING WELL DATA
JUNE 2000

PARAMETER	UNITS	MW-004	MW-004A	MW-004B	MW-005	MW-005A	MW-005B
		21-JUN-2000 902183-003	21-JUN-2000 902183-004	21-JUN-2000 902183-005	21-JUN-2000 902183-006	22-JUN-2000 902183-007	21-JUN-2000 902183-008
COLOR, FIELD		CLEAR	CLEAR	CLEAR	GREY	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	2050	481	1740	1170	365	1730
DEPTH TO WATER	FEET	14.09	13.54	50.87	7.02	7.59	53.85
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	6.89	7.31	6.94	6.92	7.67	7.11
TEMPERATURE	DEG C	12.9	14.9	13.4	12.2	22.7	15.3
TURBIDITY, FIELD		NONE	NONE	NONE	SLIGHT	NONE	NONE
WATER ELEVATION	FEET	846.80	847.01	809.04	849.29	847.94	801.82
ALKALINITY AS CaCO3	MG/L	450	230 A	470	210 A	160 A	400
CHLORIDE	MG/L	420	6.9	260	15	2.5	300
COD	MG/L	3.1 Q	3.6 Q	< 2.8	38	4.6 Q	22
HARDNESS AS CaCO3	MG/L	720	210	670	510	130	600
NITROGEN, NITRATE + NITRITE	MG/L	6.8	< 0.037	< 0.037	71	< 0.037	0.32
NITROGEN, TOTAL KJELDAHL	MG/L						
PHOSPHORUS, SOLUBLE	MG/L						
SOLIDS, TOTAL DISSOLVED	MG/L	1300	300	1100	1000	230	1100
SULFATE	MG/L	46	6.4	99	68	0.90	53
ARSENIC, DISSOLVED	UG/L	6.1 Q	41	6.3 Q	4.3 Q	39	5.8 Q
BARIUM, DISSOLVED	UG/L	150	43	95	82	28	110
CADMIUM, DISSOLVED	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
IRON, DISSOLVED	UG/L	< 16	490	310	< 16	300	3100
LEAD, DISSOLVED	UG/L	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2
MANGANESE, DISSOLVED	UG/L	0.85	14	250	630	11	110

DANE COUNTY TRUAX LANDFILL
 MONITORING WELL DATA
 JUNE 2000

PARAMETER	UNITS	MW-005B DUP	MW-010	MW-011	MW-012B	MW-012C	MW-014
		21-JUN-2000 902183-012	22-JUN-2000 902213-008	22-JUN-2000 902213-007	22-JUN-2000 902213-005	22-JUN-2000 902213-006	21-JUN-2000 902183-009
COLOR, FIELD			CLEAR	GREY	GREY	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM		2020	4750	1530	815	1142
DEPTH TO WATER	FEET		9.29	33.38	50.50	50.18	21.13
ODOR, FIELD			NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU		6.96	7.06	6.90	7.35	7.23
TEMPERATURE	DEG C		14.2	13.2	13.4	14.9	13.5
TURBIDITY, FIELD			SLIGHT	SLIGHT	MODERATE	NONE	SLIGHT
WATER ELEVATION	FEET		850.28				
ALKALINITY AS CaCO3	MG/L	400	1000	1200	520	260	843.66
CHLORIDE	MG/L	290	48	920	130	76	360
COD	MG/L	17	28	40	< 2.8	< 2.8	100
HARDNESS AS CaCO3	MG/L	610	840	1400	630	370	2.8
NITROGEN, NITRATE + NITRITE	MG/L	0.30	0.55	0.20	5.5	2.0	530
NITROGEN, TOTAL KJELDAHL	MG/L		44	1.0	0.45	< 0.23	1.5
PHOSPHORUS, SOLUBLE	MG/L		< 0.31	< 0.31	Q	< 0.31	
SOLIDS, TOTAL DISSOLVED	MG/L	1100	1200	2800	1000	560	820
SULFATE	MG/L	52	110	71	35	20	72
ARSENIC, DISSOLVED	UG/L	5.3	Q	< 3.7	< 3.7	< 3.7	4.9
BARIUM, DISSOLVED	UG/L	120	130	320	85	5.9	78
CADMIUM, DISSOLVED	UG/L	< 0.36	2.3	< 0.36	< 0.36	< 0.36	< 0.36
IRON, DISSOLVED	UG/L	3200	310	58	26	< 16	130
LEAD, DISSOLVED	UG/L	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2
MANGANESE, DISSOLVED	UG/L	120	470	280	100	< 0.26	7.8

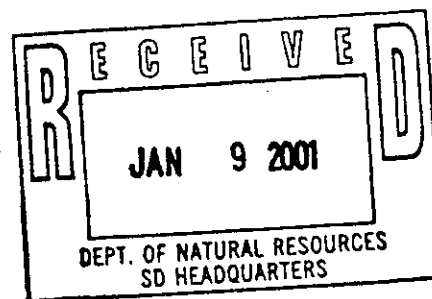
DANE COUNTY TRUAX LANDFILL
 MONITORING WELL DATA
 JUNE 2000

PARAMETER	UNITS	OSCAR #5	TG-01	TG-02
		22-JUN-2000 902213-001	21-JUN-2000 902183-010	21-JUN-2000 902183-011
COLOR, FIELD		CLEAR	TAN	TAN
CONDUCTANCE, SPECIFIC	UMHOS/CM	1053	1305	946
DEPTH TO WATER	FEET		19.47	13.33
ODOR, FIELD		NONE	NONE	NONE
PH, FIELD	SU	6.91	6.89	7.07
TEMPERATURE	DEG C	12.7	13.5	12.5
TURBIDITY, FIELD		NONE	VERY	VERY
WATER ELEVATION	FEET		846.21	847.76
ALKALINITY AS CaCO3	MG/L	340	510	410
CHLORIDE	MG/L	92	41	5.5
COD	MG/L	2.9	11	2.8
HARDNESS AS CaCO3	MG/L	510	620	580
NITROGEN, NITRATE + NITRITE	MG/L	0.25	< 0.037	2.0
NITROGEN, TOTAL KJELDAHL	MG/L			
PHOSPHORUS, SOLUBLE	MG/L			
SOLIDS, TOTAL DISSOLVED	MG/L	680	880	650
SULFATE	MG/L	50	74	47
ARSENIC, DISSOLVED	UG/L	< 3.7	7.3	6.7
BARIUM, DISSOLVED	UG/L	42	190	100
CADMIUM, DISSOLVED	UG/L	0.73	< 0.36	< 0.36
IRON, DISSOLVED	UG/L	360	1400	750
LEAD, DISSOLVED	UG/L	< 2.2	< 2.2	3.5
MANGANESE, DISSOLVED	UG/L	55	470	84



December 21, 2000

Ms. Barb Derflinger, P.G.
Hydrogeologist
Wisconsin Department of Natural Resources
101 South Webster Street SW/3
Madison, WI 53707



**Subject: Environmental Monitoring
Third Quarter Results
Closed Dane County Truax Landfill**

Dear Ms. Derflinger:

Enclosed is a summary of the laboratory results for the third quarter groundwater sampling event for 2000, and the gas monitoring results for the third quarter (measurements recorded biweekly). The groundwater sampling for the third quarter was conducted by RMT, Inc. (RMT), on September 28 and 29, 2000. The third quarter round included the annual analysis of volatile organic compounds (VOCs). A copy of this letter and a computer diskette containing the third quarter laboratory analytical results and the gas monitoring results have been submitted to the Environmental Monitoring Data Section of the Bureau of Waste Management at the Wisconsin Department of Natural Resources (WDNR) Central Office in Madison. Groundwater samples were collected and gas probes were sampled (except during September) according to the environmental monitoring plan in the Conditional Plan Approval letter dated November 18, 1999.

Groundwater continues to flow historically to the northwest, and historically downward hydraulic gradients continue to be observed at well nests MW-1, MW-4, MW-5, and MW-13. Table 1 presents a summary of the water quality indicator parameters, metals, and VOCs that exceeded the current NR 140 Preventive Action Limits (PAL) and Enforcement Standards (ES). Summary tables for all the groundwater quality data are also attached. The indicator parameter results for samples collected and analyzed for the third quarter 2000 are generally similar to historical data for the site. The trends in the inorganic and metals data indicate that there may be some impacts on groundwater quality in downgradient monitoring wells (monitoring wells MW-3, MW-3A, MW-11, MW-12B, and MW-12C), but that there are other potential sources in the area that may also be contributing to the impacts, since some impacts are in sidegradient monitoring wells from the landfill (such as monitoring wells TG-1, TG-2, MW-1A, MW-4, MW-4A, MW-4B, MW-5, MW-5A, MW-5B) and upgradient monitoring wells (MW-6, MW-7, and MW-8).

Specific volatile organic compounds, including cis-1,2-dichloroethene; tetrachloroethene; trichloroethene; and vinyl chloride, were detected at concentrations similar to those of historical rounds in sidegradient and downgradient wells. Chloroform was detected in monitoring well

Ms. Barb Derflinger, P.G.
Wisconsin Department of Natural Resources
December 21, 2000
Page 2

MW-13A between the Limit of Detection (LOD) and the Limit of Quantitation (LOQ). Since the VOC detections were at both sidegradient and downgradient wells, there appear to be multiple sources of VOCs in the vicinity of the landfill that contribute to groundwater impacts.

In summary, water quality data collected by RMT during the first three quarters of 2000, when interpreted historically, continue to indicate that, although the landfill has had an impact on groundwater quality near the landfill, there are other sources in the vicinity that make it difficult to separate the impacts and pinpoint which impacts are attributed specifically to the landfill.


Please call us if you have any questions.

Sincerely,

RMT, Inc.



Dale H. Rezabek, P.G., C.P.G.
Hydrogeologist



Curtis D. Madsen, P.E.
Project Manager

Attachments: Table 1, Summary of NR 140 Exceedences – September 2000
Gas Probe Data (July, August, September)
Summary of September Groundwater Monitoring Well Data and Gas Probe Data

cc: Kathy Thompson - Environmental Monitoring Data Section, WDNR (letter w/ data diskette, data certification, and data tables)
Mark Harder, WDNR – SCR (letter w/ data tables only)
Mike Kirchner - DCRA (letter w/ data tables only)

TABLE 1

DANE COUNTY TRUAX LANDFILL

PARAMETERS THAT EXCEED CURRENT REGULATORY STANDARDS
SEPTEMBER 2000

BEGINNING SEARCH DATE: 01-SEP-2000

ENDING SEARCH DATE: 30-SEP-2000

CHEMICAL PARAMETER	UNITS	NR140 PAL	NR140 ES	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS	EXCEEDANCE	WITHIN DMZ?
ARSENIC, DISSOLVED	UG/L	5	50	MW-001	28-SEP-2000	6.2	Q	PAL	
				MW-001A	28-SEP-2000	5.0	Q	PAL	
				MW-003	29-SEP-2000	5.9	Q	PAL	
				MW-004	28-SEP-2000	5.7	Q	PAL	
				MW-004A	28-SEP-2000	40		PAL	
				MW-004B	28-SEP-2000	9.4	Q	PAL	
				MW-005A	28-SEP-2000	24		PAL	
				MW-006	28-SEP-2000	10	Q	PAL	
				MW-007	28-SEP-2000	7.1	Q	PAL	
				MW-008	28-SEP-2000	11	Q	PAL	
				MW-009	28-SEP-2000	5.8	Q	PAL	
				MW-010	28-SEP-2000	51		PAL	Y
				MW-011	29-SEP-2000	13		PAL	Y
				MW-012B	28-SEP-2000	7.6	Q	PAL	Y
TG-01	28-SEP-2000	9.3	Q	PAL					
CADMIUM, DISSOLVED	UG/L	.5	5	MW-001A	28-SEP-2000	0.54	Q	PAL	
				MW-005A	28-SEP-2000	0.51	Q	PAL	
				MW-007	28-SEP-2000	0.97	Q	PAL	
				MW-010	28-SEP-2000	0.91	Q	PAL	Y
CHLORIDE	MG/L	125	250	MW-004	28-SEP-2000	300		ES	
				MW-004B	28-SEP-2000	150		PAL	
				MW-009	28-SEP-2000	530		ES	
				MW-010	28-SEP-2000	310		PAL	Y
				MW-011	29-SEP-2000	1000		PAL	Y
CHLOROFORM	UG/L	.6	6	MW-013A	29-SEP-2000	0.66	Q	PAL	
IRON, DISSOLVED	UG/L	150	300	MW-001A	28-SEP-2000	210		PAL	

TABLE 1

DANE COUNTY TRUAX LANDFILL

PARAMETERS THAT EXCEED CURRENT REGULATORY STANDARDS
SEPTEMBER 2000

BEGINNING SEARCH DATE: 01-SEP-2000
ENDING SEARCH DATE: 30-SEP-2000

CHEMICAL PARAMETER	UNITS	NR140 PAL	NR140 ES	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS	EXCEEDANCE	WITHIN DM2?
IRON, DISSOLVED	UG/L	150	300	MW-004A	28-SEP-2000	390		ES	
				MW-004B	28-SEP-2000	1900		ES	
				MW-006	28-SEP-2000	960		ES	
				MW-008	28-SEP-2000	3000		ES	
				MW-010	28-SEP-2000	8400		PAL	Y
				OSCAR #5	28-SEP-2000	340		ES	
				TG-01	28-SEP-2000	1600		ES	
				TG-02	28-SEP-2000	180		PAL	
LEAD, DISSOLVED	UG/L	1.5	15	MW-001A	28-SEP-2000	7.7		PAL	
				MW-003	29-SEP-2000	9.1		PAL	
				MW-003A	29-SEP-2000	3.7	Q	PAL	
				MW-004A	28-SEP-2000	8.4		PAL	
				MW-004B	28-SEP-2000	3.5	Q	PAL	
				MW-005A	28-SEP-2000	6.4	Q	PAL	
				MW-005B	28-SEP-2000	9.8		PAL	
				MW-008	28-SEP-2000	5.7	Q	PAL	
				MW-010	28-SEP-2000	4.0	Q	PAL	Y
				MW-011	29-SEP-2000	8.6		PAL	Y
				MW-012B	28-SEP-2000	2.4	Q	PAL	Y
				MW-012C	29-SEP-2000	7.4		PAL	Y
				MW-013	29-SEP-2000	3.8	Q	PAL	
MW-013A	29-SEP-2000	7.2		PAL					
MANGANESE, DISSOLVED	UG/L	25	50	MW-001A	28-SEP-2000	1500		ES	
				MW-004B	28-SEP-2000	200		ES	
				MW-005	28-SEP-2000	670		ES	
				MW-006	28-SEP-2000	780		ES	
				MW-007	28-SEP-2000	390		ES	
				MW-008	28-SEP-2000	860		ES	

TABLE 1

DANE COUNTY TRUAX LANDFILL
 PARAMETERS THAT EXCEED CURRENT REGULATORY STANDARDS
 SEPTEMBER 2000

BEGINNING SEARCH DATE: 01-SEP-2000
 ENDING SEARCH DATE: 30-SEP-2000

CHEMICAL PARAMETER	UNITS	NR140 PAL	NR140 ES	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS	EXCEEDANCE	WITHIN DM2?				
MANGANESE, DISSOLVED	UG/L	25	50	MW-010	28-SEP-2000	800							
				MW-011	29-SEP-2000	330		PAL	Y				
				OSCAR #5	28-SEP-2000	56		PAL	Y				
				TG-01	28-SEP-2000	450		ES					
NITROGEN, NITRATE + NITRITE	MG/L	2	10	MW-003	29-SEP-2000	15		ES					
				MW-003A	29-SEP-2000	2.3		PAL					
				MW-004	28-SEP-2000	6.6		PAL					
				MW-005	28-SEP-2000	73		ES					
				MW-005B	28-SEP-2000	31		ES					
				MW-007	28-SEP-2000	55		ES					
				MW-009	28-SEP-2000	8.0		ES					
				MW-012B	28-SEP-2000	6.1		PAL					
				MW-013	29-SEP-2000	3.4		PAL	Y				
				MW-013A	29-SEP-2000	3.2		PAL					
				MW-014	28-SEP-2000	2.3		PAL					
				SULFATE	MG/L	125	250	MW-006	28-SEP-2000	150		PAL	
								MW-007	28-SEP-2000	580		ES	
								MW-008	28-SEP-2000	840		ES	
TETRACHLOROETHENE	UG/L	.5	5	MW-012B	28-SEP-2000	1.8		PAL	Y				
				OSCAR #5	28-SEP-2000	3.4		PAL					
TRICHLOROETHENE	UG/L	.5	5	MW-003A	29-SEP-2000	0.77	Q	PAL					
				MW-012B	28-SEP-2000	1.6		PAL	Y				
				MW-014	28-SEP-2000	0.63	Q	PAL					
				OSCAR #5	28-SEP-2000	4.4		PAL					
VINYL CHLORIDE	UG/L	.02	.2	MW-011	29-SEP-2000	0.42	Q	PAL	Y				

DANE COUNTY TRUAX LANDFILL
FIELD AND INORGANIC PARAMETERS
THIRD QUARTER 2000

PARAMETER	UNITS	MW-004B	MW-005	MW-005A	MW-005B	MW-006	MW-007
		28-SEP-2000 903587-007	28-SEP-2000 903587-008	28-SEP-2000 903587-009	28-SEP-2000 903587-010	28-SEP-2000 903587-011	28-SEP-2000 903587-012
COLOR, FIELD		CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	1201	994	551	1126	1185	2330
DEPTH TO WATER	FEET	50.52	10.00	9.67	53.49	7.46	6.73
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	7.13	5.85	7.24	7.06	6.98	6.98
TEMPERATURE	DEG C	12.6	15.1	12.8	12.3	17.0	13.5
TURBIDITY, FIELD		NONE	SLIGHT	NONE	NONE	NONE	NONE
WATER ELEVATION	FEET	809.39	846.31	845.86	802.18	846.14	845.95
ALKALINITY AS CaCO3	MG/L	310	250	210	290	390	480
CHLORIDE	MG/L	150	11	26	32	46	31
COD	MG/L	35	54	26	48	40	110
HARDNESS AS CaCO3	MG/L	460	520	200	420	460	1300
NITROGEN, NITRATE + NITRITE	MG/L	0.29	73	1.4	31	0.065	55
NITROGEN, TOTAL KJELDAHL	MG/L					Q	
PHOSPHORUS, SOLUBLE	MG/L						
SOLIDS, TOTAL DISSOLVED	MG/L	700	850	320	720	760	1800
SULFATE	MG/L	70	73	18	86	150	580
ARSENIC, DISSOLVED	UG/L	9.4	Q	< 3.7	24	4.9	10
BARIUM, DISSOLVED	UG/L	63	64	37	60	99	73
CADMIUM, DISSOLVED	UG/L	< 0.36	< 0.36	0.51	Q	< 0.36	< 0.36
IRON, DISSOLVED	UG/L	1900	< 16	20	Q	17	960
LEAD, DISSOLVED	UG/L	3.5	Q	< 2.2	6.4	Q	9.8
MANGANESE, DISSOLVED	UG/L	200	670	23	4.8	< 2.2	< 2.2
						780	390

DANE COUNTY TRUAX LANDFILL
FIELD AND INORGANIC PARAMETERS
THIRD QUARTER 2000

PARAMETER	UNITS	MW-008	MW-009	MW-010	MW-011	MW-012B	MW-012C
		28-SEP-2000 903587-013	28-SEP-2000 903587-014	28-SEP-2000 903587-015	29-SEP-2000 903587-016	28-SEP-2000 903587-017	29-SEP-2000 903587-018
COLOR, FIELD		CLEAR	GREY	CLEAR	GREY	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	2290	2510	3180	4860	1498	951
DEPTH TO WATER	FEET	6.11	50.57	10.13	33.37	48.57	48.45
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	6.96	6.85	6.93	6.91	6.86	7.12
TEMPERATURE	DEG C	13.4	13.1	14.8	13.1	13.8	11.9
TURBIDITY, FIELD		NONE	SLIGHT	NONE			
WATER ELEVATION	FEET	845.99	838.27	849.44		NONE	NONE
ALKALINITY AS CaCO3	MG/L	360	400	1300			
CHLORIDE	MG/L	48	530	310	1100	560	160
COD	MG/L	120	16	72	1000	120	35
HARDNESS AS CaCO3	MG/L	1300	1000	970	< 2.8	62	51
NITROGEN, NITRATE + NITRITE	MG/L	< 0.037	8.0	0.045	Q 1400	600	170
NITROGEN, TOTAL KJELDAHL	MG/L			69	< 0.19	6.1	0.75
PHOSPHORUS, SOLUBLE	MG/L			0.43	< 0.23	0.89	1.2
SOLIDS, TOTAL DISSOLVED	MG/L	1900	1500	1700	< 0.31	< 0.31	< 0.31
SULFATE	MG/L	840	54	83	2800	900	260
ARSENIC, DISSOLVED	UG/L	11	Q 5.8	Q 51	79	38	12
BARIUM, DISSOLVED	UG/L	130	82	150	13	7.6	Q 3.7
CADMIUM, DISSOLVED	UG/L	< 0.36	< 0.36	0.91	300	83	8.2
IRON, DISSOLVED	UG/L	3000	< 16	8400	< 0.36	< 0.36	< 0.36
LEAD, DISSOLVED	UG/L	5.7	Q < 2.2	4.0	47	Q < 16	28
MANGANESE, DISSOLVED	UG/L	860	0.34	Q 800	8.6	2.4	Q 7.4
					330	17	14

DANE COUNTY TRUAX LANDFILL
FIELD AND INORGANIC PARAMETERS
THIRD QUARTER 2000

PARAMETER	UNITS	MW-013	MW-013A	MW-014	OSCAR #5	TG-01	TG-02
		29-SEP-2000 903587-019	29-SEP-2000 903587-020	28-SEP-2000 903587-021	28-SEP-2000 903587-024	28-SEP-2000 903587-022	28-SEP-2000 903587-023
COLOR, FIELD		GREY	CLEAR	CLEAR	CLEAR	TAN	TAN
CONDUCTANCE, SPECIFIC	UMHOS/CM	997	828	980	1046	1316	854
DEPTH TO WATER	FEET	56.35	56.61	21.04		20.12	15.15
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	7.34	7.22	6.76	7.12	6.90	7.01
TEMPERATURE	DEG C	12.7	12.4	12.6	11.7	13.5	15.1
TURBIDITY, FIELD		MOD	NONE	NONE	NONE	VERY	VERY
WATER ELEVATION	FEET	837.26	837.06	843.75		845.56	845.94
ALKALINITY AS CaCO3	MG/L	430	400	390	390	560	470
CHLORIDE	MG/L	60	25	56	89	42	3.7
COD	MG/L	14	24	16	16	18	16
HARDNESS AS CaCO3	MG/L	490	430	440	470	620	460
NITROGEN, NITRATE + NITRITE	MG/L	3.4	3.2	2.3	0.24	< 0.037	0.90
NITROGEN, TOTAL KJELDAHL	MG/L						
PHOSPHORUS, SOLUBLE	MG/L						
SOLIDS, TOTAL DISSOLVED	MG/L	570	500	580	610	780	500
SULFATE	MG/L	37	34	65	52	70	34
ARSENIC, DISSOLVED	UG/L	4.2	Q < 3.7	3.8	Q 3.8	9.3	Q 3.9
BARIUM, DISSOLVED	UG/L	50	18	61	41	190	90
CADMIUM, DISSOLVED	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
IRON, DISSOLVED	UG/L	< 16	< 16	< 16	340	1600	180
LEAD, DISSOLVED	UG/L	3.8	Q 7.2	< 2.2	< 2.2	< 2.2	< 2.2
MANGANESE, DISSOLVED	UG/L	0.48	Q 0.34	Q 1.3	56	450	15

DANE COUNTY TRUAX LANDFILL
MONITORING WELL VOCs
SEPTEMBER 2000

PARAMETER	UNITS	MW-004B	MW-005	MW-005A	MW-005B	MW-006	MW-007
		28-SEP-2000 903587-007	28-SEP-2000 903587-008	28-SEP-2000 903587-009	28-SEP-2000 903587-010	28-SEP-2000 903587-011	28-SEP-2000 903587-012
1,1,1,2-TETRACHLOROETHANE	UG/L	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49
1,1,1-TRICHLOROETHANE	UG/L	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53
1,1,2,2-TETRACHLOROETHANE	UG/L	< 0.68	< 0.68	< 0.68	< 0.68	< 0.68	< 0.68
1,1,2-TRICHLOROETHANE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
1,1-DICHLOROETHANE	UG/L	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61
1,1-DICHLOROETHENE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
1,1-DICHLOROPROPENE	UG/L	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59
1,2,3-TRICHLOROBENZENE	UG/L	< 0.57	< 0.57	< 0.57	< 0.57	< 0.57	< 0.57
1,2,3-TRICHLOROPROPANE	UG/L	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71
1,2,4-TRICHLOROBENZENE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
1,2,4-TRIMETHYLBENZENE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
1,2-DIBROMO-3-CHLOROPROPANE	UG/L	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,2-DIBROMOETHANE	UG/L	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49
1,2-DICHLOROBENZENE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
1,2-DICHLOROETHANE	UG/L	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
1,2-DICHLOROPROPANE	UG/L	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,3,5-TRIMETHYLBENZENE	UG/L	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45
1,3-DICHLOROBENZENE	UG/L	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64
1,3-DICHLOROPROPANE	UG/L	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42
1,4-DICHLOROBENZENE	UG/L	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43
2,2-DICHLOROPROPANE	UG/L	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41
2-CHLOROTOLUENE	UG/L	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65
4-CHLOROTOLUENE	UG/L	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56
BENZENE	UG/L	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44
BROMOBENZENE	UG/L	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46
BROMOCHLOROMETHANE	UG/L	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21
BROMODICHLOROMETHANE	UG/L	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41
BROMOFORM	UG/L	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58
BROMOMETHANE	UG/L	< 0.94	< 0.94	< 0.94	< 0.94	< 0.94	< 0.94
CARBON TETRACHLORIDE	UG/L	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
CHLOROBENZENE	UG/L	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43
CHLORODIBROMOMETHANE	UG/L	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43

DANE COUNTY TRUAX LANDFILL
MONITORING WELL VOCs
SEPTEMBER 2000

PARAMETER	UNITS	MW-008	MW-009	MW-010	MW-011	MW-012B	MW-012C
		28-SEP-2000 903587-013	28-SEP-2000 903587-014	28-SEP-2000 903587-015	29-SEP-2000 903587-016	28-SEP-2000 903587-017	29-SEP-2000 903587-018
1,1,1,2-TETRACHLOROETHANE	UG/L	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49
1,1,1-TRICHLOROETHANE	UG/L	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53
1,1,2,2-TETRACHLOROETHANE	UG/L	< 0.68	< 0.68	< 0.68	< 0.68	< 0.68	< 0.68
1,1,2-TRICHLOROETHANE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
1,1-DICHLOROETHANE	UG/L	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61
1,1-DICHLOROETHENE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
1,1-DICHLOROPROPENE	UG/L	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59
1,2,3-TRICHLOROBENZENE	UG/L	< 0.57	< 0.57	< 0.57	< 0.57	< 0.57	< 0.57
1,2,3-TRICHLOROPROPANE	UG/L	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71
1,2,4-TRICHLOROBENZENE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
1,2,4-TRIMETHYLBENZENE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
1,2-DIBROMO-3-CHLOROPROPANE	UG/L	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,2-DIBROMOETHANE	UG/L	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49
1,2-DICHLOROBENZENE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
1,2-DICHLOROETHANE	UG/L	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
1,2-DICHLOROPROPANE	UG/L	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,3,5-TRIMETHYLBENZENE	UG/L	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45
1,3-DICHLOROBENZENE	UG/L	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64
1,3-DICHLOROPROPANE	UG/L	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42
1,4-DICHLOROBENZENE	UG/L	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43
2,2-DICHLOROPROPANE	UG/L	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41
2-CHLOROTOLUENE	UG/L	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65
4-CHLOROTOLUENE	UG/L	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56
BENZENE	UG/L	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44
BROMOBENZENE	UG/L	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46
BROMOCHLOROMETHANE	UG/L	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21
BROMODICHLOROMETHANE	UG/L	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41
BROMOFORM	UG/L	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58
BROMOMETHANE	UG/L	< 0.94	< 0.94	< 0.94	< 0.94	< 0.94	< 0.94
CARBON TETRACHLORIDE	UG/L	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
CHLOROBENZENE	UG/L	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43
CHLORODIBROMOMETHANE	UG/L	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43

DANE COUNTY TRUAX LANDFILL
MONITORING WELL VOCs
SEPTEMBER 2000

PARAMETER	UNITS	MW-008	MW-009	MW-010	MW-011	MW-012B	MW-012C
		28-SEP-2000 903587-013	28-SEP-2000 903587-014	28-SEP-2000 903587-015	29-SEP-2000 903587-016	28-SEP-2000 903587-017	29-SEP-2000 903587-018
CHLOROETHANE	UG/L	< 0.63	< 0.63	< 0.63	< 0.63	< 0.63	< 0.63
CHLOROFORM	UG/L	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41
CHLOROMETHANE	UG/L	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44
CIS-1,2-DICHLOROETHENE	UG/L	< 0.46	< 0.46	< 0.46	< 0.46	2.4	< 0.46
CIS-1,3-DICHLOROPROPENE	UG/L	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
DIBROMOMETHANE	UG/L	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60
DICHLORODIFLUOROMETHANE	UG/L	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61
ETHYLBENZENE	UG/L	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
FLUOROTRICHLOROMETHANE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
HEXACHLOROBUTADIENE	UG/L	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49
ISOPROPYLBENZENE	UG/L	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39
METHYLENE CHLORIDE	UG/L	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38
N-BUTYLBENZENE	UG/L	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39
N-PROPYLBENZENE	UG/L	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
NAPHTHALENE	UG/L	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59
P-ISOPROPYLTOLUENE	UG/L	< 0.51	< 0.51	< 0.51	< 0.51	< 0.51	< 0.51
SEC-BUTYLBENZENE	UG/L	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58
STYRENE	UG/L	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37
TERT-BUTYLBENZENE	UG/L	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
TETRACHLOROETHENE	UG/L	< 0.41	< 0.41	< 0.41	< 0.41	1.8	< 0.41
TOLUENE	UG/L	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40
TRANS-1,2-DICHLOROETHENE	UG/L	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64
TRANS-1,3-DICHLOROPROPENE	UG/L	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
TRIMETHYLBENZENES, TOTAL	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
TRICHLOROETHENE	UG/L	< 0.49	< 0.49	< 0.49	< 0.49	1.6	< 0.49
VINYL CHLORIDE	UG/L	< 0.17	< 0.17	< 0.17	0.42	< 0.17	< 0.17
XYLENE, M + P	UG/L	< 0.77	< 0.77	< 0.77	< 0.77	< 0.77	< 0.77
XYLENE, O	UG/L	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
XYLENE, TOTAL	UG/L	< 0.77	< 0.77	< 0.77	< 0.77	< 0.77	< 0.77

DANE COUNTY TRUAX LANDFILL
MONITORING WELL VOCs
SEPTEMBER 2000

PARAMETER	UNITS	MW-013	MW-013A	MW-014	OSCAR #5	TG-01	TG-02
		29-SEP-2000 903587-019	29-SEP-2000 903587-020	28-SEP-2000 903587-021	28-SEP-2000 903587-024	28-SEP-2000 903587-022	28-SEP-2000 903587-023
1,1,1,2-TETRACHLOROETHANE	UG/L	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49
1,1,1-TRICHLOROETHANE	UG/L	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53
1,1,2,2-TETRACHLOROETHANE	UG/L	< 0.68	< 0.68	< 0.68	< 0.68	< 0.68	< 0.68
1,1,2-TRICHLOROETHANE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
1,1-DICHLOROETHANE	UG/L	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61
1,1-DICHLOROETHENE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
1,1-DICHLOROPROPENE	UG/L	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59
1,2,3-TRICHLOROBENZENE	UG/L	< 0.57	< 0.57	< 0.57	< 0.57	< 0.57	< 0.57
1,2,3-TRICHLOROPROPANE	UG/L	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71
1,2,4-TRICHLOROBENZENE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
1,2,4-TRIMETHYLBENZENE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
1,2-DIBROMO-3-CHLOROPROPANE	UG/L	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,2-DIBROMOETHANE	UG/L	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49
1,2-DICHLOROBENZENE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
1,2-DICHLOROETHANE	UG/L	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
1,2-DICHLOROPROPANE	UG/L	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,3,5-TRIMETHYLBENZENE	UG/L	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45
1,3-DICHLOROBENZENE	UG/L	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64
1,3-DICHLOROPROPANE	UG/L	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42
1,4-DICHLOROBENZENE	UG/L	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43
2,2-DICHLOROPROPANE	UG/L	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41
2-CHLOROTOLUENE	UG/L	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65	< 0.65
4-CHLOROTOLUENE	UG/L	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56
BENZENE	UG/L	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44
BROMOBENZENE	UG/L	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46
BROMOCHLOROMETHANE	UG/L	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21
BROMODICHLOROMETHANE	UG/L	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41
BROMOFORM	UG/L	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58
BROMOMETHANE	UG/L	< 0.94	< 0.94	< 0.94	< 0.94	< 0.94	< 0.94
CARBON TETRACHLORIDE	UG/L	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
CHLOROBENZENE	UG/L	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43
CHLORODIBROMOMETHANE	UG/L	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43

DANE COUNTY TRUAX LANDFILL
 MONITORING WELL VOCs
 SEPTEMBER 2000

PARAMETER	UNITS	MW-013	MW-013A	MW-014	OSCAR #5	TG-01	TG-02
		29-SEP-2000 903587-019	29-SEP-2000 903587-020	28-SEP-2000 903587-021	28-SEP-2000 903587-024	28-SEP-2000 903587-022	28-SEP-2000 903587-023
CHLOROETHANE	UG/L	< 0.63	< 0.63	< 0.63	< 0.63	< 0.63	< 0.63
CHLOROFORM	UG/L	< 0.41	0.66	Q < 0.41	< 0.41	< 0.41	< 0.41
CHLOROMETHANE	UG/L	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44	< 0.44
CIS-1,2-DICHLOROETHENE	UG/L	< 0.46	< 0.46	4.5	0.73	Q < 0.46	< 0.46
CIS-1,3-DICHLOROPROPENE	UG/L	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
DIBROMOMETHANE	UG/L	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60
DICHLORODIFLUOROMETHANE	UG/L	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61	< 0.61
ETHYLBENZENE	UG/L	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
FLUOROTRICHLOROMETHANE	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
HEXACHLOROBUTADIENE	UG/L	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49	< 0.49
ISOPROPYLBENZENE	UG/L	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39
METHYLENE CHLORIDE	UG/L	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38
N-BUTYLBENZENE	UG/L	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39
N-PROPYLBENZENE	UG/L	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
NAPHTHALENE	UG/L	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59	< 0.59
P-ISOPROPYLTOLUENE	UG/L	< 0.51	< 0.51	< 0.51	< 0.51	< 0.51	< 0.51
SEC-BUTYLBENZENE	UG/L	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58
STYRENE	UG/L	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37
TERT-BUTYLBENZENE	UG/L	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
TETRACHLOROETHENE	UG/L	< 0.41	< 0.41	< 0.41	3.4	< 0.41	< 0.41
TOLUENE	UG/L	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40
TRANS-1,2-DICHLOROETHENE	UG/L	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64	< 0.64
TRANS-1,3-DICHLOROPROPENE	UG/L	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
TRIMETHYLBENZENES, TOTAL	UG/L	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47
TRICHLOROETHENE	UG/L	< 0.49	< 0.49	0.63	Q 4.4	< 0.49	< 0.49
VINYL CHLORIDE	UG/L	< 0.17	< 0.17	0.33	Q < 0.17	< 0.17	< 0.17
XYLENE, M + P	UG/L	< 0.77	< 0.77	< 0.77	< 0.77	< 0.77	< 0.77
XYLENE, O	UG/L	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54	< 0.54
XYLENE, TOTAL	UG/L	< 0.77	< 0.77	< 0.77	< 0.77	< 0.77	< 0.77

DANE COUNTY TRUAX LANDFILL

GAS PROBE DATA

AUGUST 2000

PARAMETER	UNITS	GP-13	GP-14	GP-14	GP-15	GP-15	GP-16
		25-AUG-2000 000825-X12	11-AUG-2000 000811-X13	25-AUG-2000 000825-X13	11-AUG-2000 000811-X14	25-AUG-2000 000825-X14	11-AUG-2000 000811-X15
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	17.4	16.9	16.8	20.0	20.2	19.5
TEMPERATURE, AIR	DEG F	75	65	75	65	75	65
PRESSURE, BAROMETRIC	MM HG	763.27	767.08	763.27	767.08	763.27	767.08
BAROMETRIC PRESSURE TREND		-1		-1		-1	
GROUND CONDITIONS		AVERAGE	DAMP	AVERAGE	DAMP	AVERAGE	DAMP
VACUUM	IN/WATER	0.0	0.0	0.0	0.1	0.0	0.0

DANE COUNTY TRUAX LANDFILL
GAS PROBE DATA
AUGUST 2000

PARAMETER	UNITS	GP-16	GP-17	GP-17	GP-18	GP-18	GP-19E NORTH
		25-AUG-2000 000825-X15	11-AUG-2000 000811-X16	25-AUG-2000 000825-X16	11-AUG-2000 000811-X17	25-AUG-2000 000825-X17	11-AUG-2000 000811-X19
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	14.7	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	16.9	20.2	8.5	15.7	14.8	16.3
TEMPERATURE, AIR	DEG F	75	65	75	65	75	65
PRESSURE, BAROMETRIC	MM HG	763.27	767.08	763.27	767.08	763.27	767.08
BAROMETRIC PRESSURE TREND		-1		-1		-1	
GROUND CONDITIONS		AVERAGE	DAMP	AVERAGE	DAMP	AVERAGE	DAMP
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL

GAS PROBE DATA

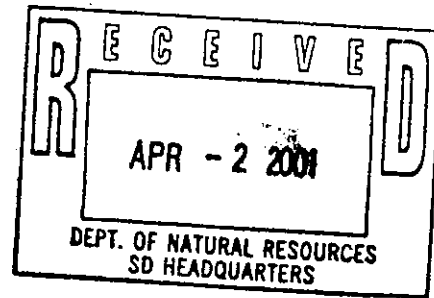
JULY 2000

PARAMETER	UNITS	GP-13	GP-13	GP-14	GP-14	GP-15	GP-15
		03-JUL-2000	28-JUL-2000	03-JUL-2000	28-JUL-2000	03-JUL-2000	28-JUL-2000
		000703-X12	000728-X12	000703-X13	000728-X13	000703-X14	000728-X14
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	16.0	17.2	17.3	17.0	19.5	20.1
TEMPERATURE, AIR	DEG F	65	70	65	70	65	70
PRESSURE, BAROMETRIC	MM HG	762.25	759.97	762.25	759.97	762.25	759.97
BAROMETRIC PRESSURE TREND							
GROUND CONDITIONS		WET	MOIST	WET	MOIST	WET	MOIST
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0



March 29, 2001

Ms. Barb Derflinger, P.G.
Hydrogeologist
Wisconsin Department of Natural Resources
101 South Webster Street SW/3
Madison, WI 53707



Subject: Environmental Monitoring
Fourth Quarter 2000 Results
Closed Dane County Truax Landfill

Dear Ms. Derflinger:

Enclosed is a summary of the laboratory results for the fourth quarter groundwater sampling event for 2000, and the gas probe and extraction monitoring results for the fourth quarter (measurements recorded biweekly in September, October, November, and December 2000). In addition, gas extraction monitoring results for August 2000 are included because they were inadvertently left out of the third quarter report. The groundwater sampling for the fourth quarter was conducted by RMT, Inc. (RMT), on December 18 through 19, 2000. A copy of this letter and a computer diskette containing the fourth quarter laboratory analytical results and the gas monitoring results have been submitted to the Environmental Monitoring Data Section of the Bureau of Waste Management at the Wisconsin Department of Natural Resources (WDNR) Central Office in Madison. Groundwater samples were collected and gas probes were sampled according to the environmental monitoring plan in the Conditional Plan Approval letter dated November 18, 1999.

Four of the wells in the monitoring well network could not be sampled. Monitoring wells MW-3A, MW-10, and MW-101 (water level only) could not be located because of the deep snow cover. Well OM-5, one of the Oscar Mayer production wells, could not be sampled because it was not operational at the time of the monitoring round. Oscar Mayer reported that it would not be in service for approximately 6 weeks.

Groundwater continues to flow to the northwest, and downward hydraulic gradients continue to be observed at wells nests MW-1/1A, MW-4/4A/4B, MW-5/5A/5B, and MW-13/13A (calculations are attached). Table 1 presents a summary of the water quality indicator parameters, and the metals that exceeded the current NR 140 Preventive Action Limits (PAL) and Enforcement Standards (ES). Summary tables for all the groundwater quality data are also attached. The indicator parameter results for samples collected and analyzed for the fourth quarter 2000 are generally similar to historical data for the site. The trends in the inorganic and metals data indicate that there may be some impacts on groundwater quality in downgradient monitoring wells (monitoring wells MW-3, MW-11, MW-12B, and MW-12C), but that there are other potential sources in the area also

Ms. Barb Derflinger, P.G.
Wisconsin Department of Natural Resources
March 29, 2001
Page 2

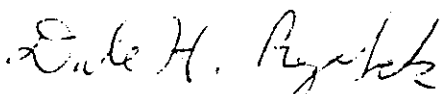
contributing to the impacts, since some impacts are in sidegradient monitoring wells from the landfill (such as monitoring wells TG-1, MW-1A, MW-4, MW-4A, MW-4B, MW-5, MW-5A, MW-5B).

In summary, water quality data collected by RMT during the fourth quarter of 2000 are interpreted to indicate that, although the landfill has had an impact on groundwater quality near the landfill, there are other sources in the vicinity which make it difficult to separate the impacts and pinpoint which impacts are attributed specifically to the landfill.

Please call us if you have any questions.

Sincerely,

RMT, Inc.



Dale H. Rezabek, P.G., C.P.G.
Hydrogeologist



Curtis D. Madsen, P.E.
Project Manager

Attachments: Table 1, Summary of NR 140 Exceedences - December 2000
Summary of Vertical Hydraulic Gradient Calculations, 4th Quarter 2000
Gas Monitoring Data (August, September, October, November, December 2000)
Summary of December 2000 Groundwater Monitoring Well Data and 4th Quarter Gas
Probe Monitoring Data

cc: Kathy Thompson - Environmental Monitoring Data Section, WDNR (letter w/ data diskette, data certification, and data tables)
Mark Harder, WDNR - SCR (letter w/ data tables only)
Mike Kirchner - DCRA (letter w/ data tables only)

DANE COUNTY TRUAX LANDFILL

GAS PROBE DATA

JULY 2000

PARAMETER	UNITS	GP-16	GP-16	GP-17	GP-17	GP-18	GP-18
		03-JUL-2000	28-JUL-2000	03-JUL-2000	28-JUL-2000	03-JUL-2000	28-JUL-2000
		000703-X15	000728-X15	000703-X16	000728-X16	000703-X17	000728-X17
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0-0.2	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	3.9-14.2	18.3	19.8	20.0	12.2	15.2
TEMPERATURE, AIR	DEG F	65	70	65	70	65	70
PRESSURE, BAROMETRIC	MM HG	762.25	759.97	762.25	759.97	762.25	759.97
BAROMETRIC PRESSURE TREND							
GROUND CONDITIONS		WET	MOIST	WET	MOIST	WET	MOIST
VACUUM	IN/WATER	0.0	0.0	0.1	0.0	0.0	0.0

TABLE 1

DANE COUNTY TRUAX LANDFILL
 PARAMETERS THAT EXCEED CURRENT REGULATORY STANDARDS
 DECEMBER 2000

BEGINNING SEARCH DATE: 01-DEC-2000
 ENDING SEARCH DATE: 30-DEC-2000

CHEMICAL PARAMETER	UNITS	NR140 PAL	NR140 ES	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS	EXCEEDANCE	WITHIN DMZ?
ARSENIC, DISSOLVED	UG/L	5	50	MW-001A	19-DEC-2000	5.2	Q	PAL	
				MW-003	18-DEC-2000	7.5	Q	PAL	
				MW-004A	19-DEC-2000	38		PAL	
				MW-004B	19-DEC-2000	7.5	Q	PAL	
				MW-005A	19-DEC-2000	37		PAL	
				MW-011	18-DEC-2000	13		PAL	Y
				MW-012B	19-DEC-2000	7.1	Q	PAL	Y
				TG-01	18-DEC-2000	5.5	Q	PAL	
CADMIUM, DISSOLVED	UG/L	.5	5	MW-001A	19-DEC-2000	0.52	Q	PAL	
CHLORIDE	MG/L	125	250	MW-004	19-DEC-2000	360		ES	
				MW-004B	19-DEC-2000	320		ES	
				MW-005B	19-DEC-2000	210		PAL	
				MW-011	18-DEC-2000	1100		PAL	Y
				MW-012B	19-DEC-2000	130		PAL	Y
IRON, DISSOLVED	UG/L	150	300	MW-004A	19-DEC-2000	480		ES	
				MW-004B	19-DEC-2000	1400		ES	
				MW-005A	19-DEC-2000	340		ES	
				MW-005B	19-DEC-2000	2900		ES	
				TG-01	18-DEC-2000	2100		ES	
MANGANESE, DISSOLVED	UG/L	25	50	MW-001A	19-DEC-2000	290		ES	
				MW-004B	19-DEC-2000	320		ES	
				MW-005	19-DEC-2000	970		ES	
				MW-005B	19-DEC-2000	100		ES	
				MW-011	18-DEC-2000	320		PAL	Y
				MW-012B	19-DEC-2000	95		PAL	Y
TG-01	18-DEC-2000	470		ES					

TABLE 1

DANE COUNTY TRUAX LANDFILL
 PARAMETERS THAT EXCEED CURRENT REGULATORY STANDARDS
 DECEMBER 2000

BEGINNING SEARCH DATE: 01-DEC-2000
 ENDING SEARCH DATE: 30-DEC-2000

CHEMICAL PARAMETER	UNITS	NR140 PAL	NR140 ES	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS	EXCEEDANCE	WITHIN DMZ?
NITROGEN, NITRATE + NITRITE	MG/L	2	10	MW-003	18-DEC-2000	16		ES	
				MW-004	19-DEC-2000	6.2		PAL	
				MW-005	19-DEC-2000	96		ES	
				MW-012B	19-DEC-2000	6.4		PAL	Y
				MW-012C	19-DEC-2000	2.1		PAL	Y
				MW-014	18-DEC-2000	2.1		PAL	

**SUMMARY OF VERTICAL HYDRAULIC GRADIENT CALCULATIONS
4TH QUARTER 2000 ENVIRONMENTAL MONITORING REPORT
DANE COUNTY TRUAX LANDFILL
MADISON, WISCONSIN**

**Gradients within the lower sand zones and sandstone.
Water levels measured on December 18, 2000**

Well	Well Type	Groundwater Elevation (h) (ft-MSL)	Reference Point (L) (ft-MSL)	Delta h (ft)	Delta L (ft)	Vertical Gradient (i) (ft/ft)
MW-1 MW-1A	water table piezometer	845.42 834.62	845.42 659.00	10.80	186.42	0.06
MW-4 MW-4A	water table piezometer	844.79 844.55	844.79 669.30	0.24	175.49	0.001
MW-4 MW-4B	water table piezometer	844.79 809.48	844.79 584.50	35.31	260.29	0.14
MW-5 MW-5A	water table piezometer	845.65 845.18	845.65 682.55	0.47	163.10	0.003
MW-5 MW-5B	water table piezometer	845.65 802.77	845.65 449.30	42.88	396.35	0.11
MW-13 MW-13A	water table piezometer	837.76 837.56	837.76 746.96	0.20	90.80	0.002

Notes:

Vertical Gradient (i) = Delta h / Delta L; Positive values indicate downward groundwater flow.
Reference Point (L) for head measurements (h) is the water table for water table wells and the midpoint of the screened interval for piezometers including the sand filter pack.

Delta h = the distance between head measurements

Delta L = the distance between reference points

Prepared by: DHR 3/28/01
Checked by: COB 3/29/01

DANE COUNTY TRUAX LANDFILL
 MONITORING WELL DATA
 DECEMBER 2000

PARAMETER	UNITS	MW-005	MW-005A	MW-005B	MW-006	MW-009	MW-011	
		19-DEC-2000	19-DEC-2000	19-DEC-2000	18-DEC-2000	18-DEC-2000	18-DEC-2000	
		904735-007	904735-008	904735-009	904735-X01	904735-X02	904735-010	
COLOR, FIELD		CLEAR	CLEAR	CLEAR			CLEAR	
CONDUCTANCE, SPECIFIC	UMHOS/CM	1293	420	1488			4990	
DEPTH TO WATER	FEET	10.66	10.35	52.90	8.20	50.01	33.79	
ODOR, FIELD		NONE	NONE	NONE			NONE	
PH, FIELD	SU	6.56	7.30	6.86			7.02	
TEMPERATURE	DEG C	7.9	8.3	7.9			9.6	
TURBIDITY, FIELD		NONE	NONE	NONE			NONE	
WATER ELEVATION	FEET	845.65	845.18	802.77	845.40	838.83		
ALKALINITY AS CaCO3	MG/L	200	200	410			1100	
CHLORIDE	MG/L	12	8.7	210			1100	
COD	MG/L	48	14	17			46	
HARDNESS AS CaCO3	MG/L	600	150	550			1500	
NITROGEN, NITRATE + NITRITE	MG/L	96	< 0.015	0.029	Q		0.67	
NITROGEN, TOTAL KJELDAHL	MG/L						0.97	Q
PHOSPHORUS, SOLUBLE	MG/L						0.21	Q
SOLIDS, TOTAL DISSOLVED	MG/L	870	250	800			2800	
SULFATE	MG/L	83	8.1	52			87	
ARSENIC, DISSOLVED	UG/L	< 3.7	37	4.2	Q		13	
BARIUM, DISSOLVED	UG/L	67	33	94			270	
CADMIUM, DISSOLVED	UG/L	< 0.36	< 0.36	< 0.36			< 0.36	
IRON, DISSOLVED	UG/L	< 39	340	2900			< 39	
LEAD, DISSOLVED	UG/L	< 2.2	< 2.2	< 2.2			< 2.2	
MANGANESE, DISSOLVED	UG/L	970	22	100			320	

DANE COUNTY TRUAX LANDFILL
 MONITORING WELL DATA
 DECEMBER 2000

PARAMETER	UNITS	TG-02	TG-03
		18-DEC-2000	18-DEC-2000
		904735-015	904735-X05
COLOR, FIELD		TAN	
CONDUCTANCE, SPECIFIC	UMHOS/CM	783	
DEPTH TO WATER	FEET	15.87	22.40
ODOR, FIELD		NONE	
PH, FIELD	SU	7.11	
TEMPERATURE	DEG C	7.8	
TURBIDITY, FIELD		VERY	
WATER ELEVATION	FEET	845.22	847.59
ALKALINITY AS CaCO3	MG/L	440	
CHLORIDE	MG/L	5.3	
COD	MG/L	< 2.6	
HARDNESS AS CaCO3	MG/L	450	
NITROGEN, NITRATE + NITRITE	MG/L	1.2	
NITROGEN, TOTAL KJELDAHL	MG/L		
PHOSPHORUS, SOLUBLE	MG/L		
SOLIDS, TOTAL DISSOLVED	MG/L	490	
SULFATE	MG/L	38	
ARSENIC, DISSOLVED	UG/L	< 3.7	
BARIUM, DISSOLVED	UG/L	88	
CADMIUM, DISSOLVED	UG/L	< 0.36	
IRON, DISSOLVED	UG/L	< 39	
LEAD, DISSOLVED	UG/L	< 2.2	
MANGANESE, DISSOLVED	UG/L	1.3	

DANE COUNTY TRUAX LANDFILL
 LANDFILL GAS
 AUGUST 2000

PARAMETER	UNITS	GP-12	GP-13	GP-13	GP-14	GP-14	GP-15
		25-AUG-2000	11-AUG-2000	25-AUG-2000	11-AUG-2000	25-AUG-2000	11-AUG-2000
		000825-X11	000811-X12	000825-X12	000811-X13	000825-X13	000811-X14
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	15.5	17.7	17.4	16.9	16.8	20.0
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	75	65	75	65	75	65
PRESSURE, BAROMETRIC	MM HG	763.27	767.08	763.27	767.08	763.27	767.08
BAROMETRIC PRESSURE TREND		-1		-1		-1	
GROUND CONDITIONS		AVERAGE	DAMP	AVERAGE	DAMP	AVERAGE	DAMP
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.1

DANE COUNTY TRUAX LANDFILL
 LANDFILL GAS
 AUGUST 2000

PARAMETER	UNITS	GP-15	GP-16	GP-16	GP-17	GP-17	GP-18
		25-AUG-2000 000825-X14	11-AUG-2000 000811-X15	25-AUG-2000 000825-X15	11-AUG-2000 000811-X16	25-AUG-2000 000825-X16	11-AUG-2000 000811-X17
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	14.7	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	20.2	19.5	16.9	20.2	8.5	15.7
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	75	65	75	65	75	65
PRESSURE, BAROMETRIC	MM HG	763.27	767.08	763.27	767.08	763.27	767.08
BAROMETRIC PRESSURE TREND		-1		-1		-1	
GROUND CONDITIONS		AVERAGE	DAMP	AVERAGE	DAMP	AVERAGE	DAMP
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL
 LANDFILL GAS
 NOVEMBER 2000

PARAMETER	UNITS	GP-07	GP-10	GP-11	GP-12	GP-13	GP-16
		20-NOV-2000 001120-X05	20-NOV-2000 001120-X06	20-NOV-2000 001120-X07	20-NOV-2000 001120-X08	20-NOV-2000 001120-X09	20-NOV-2000 001120-X10
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	15.7	19.6	18.8	16.5	19.1	19.7
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	25	25	25	25	25	25
GROUND CONDITIONS		PRT SNOW	PRT SNOW	PRT SNOW	PRT SNOW	PRT SNOW	PRT SNOW
VACUUM	IN/WATER	0.00	0.00	0.00	0.01	0.00	0.00

DANE COUNTY TRUAX LANDFILL
 LANDFILL GAS
 NOVEMBER 2000

PARAMETER	UNITS	GP-17	GP-19E NORTH	GP-19E SOUTH	GP-20 EAST	GP-20 WEST	GP-21 EAST
		20-NOV-2000 001120-X11	20-NOV-2000 001120-X12	20-NOV-2000 001120-X13	20-NOV-2000 001120-X14	20-NOV-2000 001120-X15	20-NOV-2000 001120-X16
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	19.8	19.9	17.9	20.0	20.0	20.0
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	25	25	25	25	25	25
GROUND CONDITIONS		PRT SNOW	PRT SNOW	PRT SNOW	PRT SNOW	PRT SNOW	PRT SNOW
VACUUM	IN/WATER	0.00	0.00	0.00	0.00	0.00	0.00

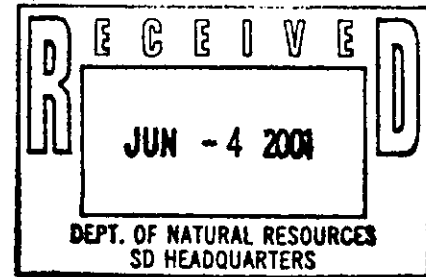


Integrated
Environmental
Solutions

744 Heartland Trail 53717-1934
P.O. Box 8923 53708-8923
Madison, WI
Telephone: 608-831-4444
Fax: 608-831-3334

June 1, 2001

Mr. Mark Harder, P.E.
South Central Region Office
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711



Ms. Barb Derflinger, P.G.
Hydrogeologist
Wisconsin Department of Natural Resources
101 South Webster Street SW/3
Madison, WI 53707

**Subject: First Quarter 2001 Environmental Monitoring Results and Maintenance Log for
Blower/Flare System
Closed Dane County Truax Landfill; License # 03306**

Dear Mr. Harder and Ms. Derflinger:

On behalf of Dane County Regional Airport (DCRA), RMT is submitting a summary of the groundwater and gas monitoring results at the Truax Landfill for the first quarter 2001, in accordance with the Department's November 18, 1999, Conditional Plan Approval letter. We are also submitting the first quarter 2001 maintenance logs for the blower/flare system in accordance with Conditions 1 and 2 of the Department's April 29, 1999, Final Cover and Landfill Gas Extraction System Construction Approval letter. Groundwater sampling is now being conducted on a semiannual basis, gas well monitoring is being conducted on a monthly basis, and gas probe monitoring is being conducted on a semimonthly basis (2 times per month). A copy of this letter and a computer diskette containing the groundwater laboratory analytical results and the gas monitoring results have been submitted to the Environmental Monitoring Data Section of the Bureau of Waste Management at the Wisconsin Department of Natural Resources (WDNR) Central Office in Madison.

Maintenance Log for Blower/Flare System

Attachment 1 to this letter contains Table 1, entitled "Truax Landfill Gas Extraction System Blower/Flare Operation and Run Time Log." This table indicates the date and time of restart or maintenance, the blower that was operating, the blower run time (hours), any maintenance completed, the flow rate, the tank levels for nitrogen and propane, and any pertinent comments.

Attachment 2 contains copies of the Truax Landfill Gas Extraction System Blower/Flare Maintenance Records (maintenance records). A maintenance record was compiled for each occurrence when the blower/flare was not operational for over 2 hours in any day in accordance with Condition 1 of the Department's April 29, 1999, approval letter. During the fourth quarter (October 1 to December 31) of

Ms. Barb Derflinger and Mr. Mark Harder
Wisconsin Department of Natural Resources
June 1, 2001
Page 2

2000, seven such occurrences were identified. A maintenance record documenting each occurrence is provided in Attachment 2.

The nonoperational status of the blower/flare system can be attributed to a variety of causes. One typical cause is the depletion of the propane tank, which fuels the flare system's pilot flame, or of the nitrogen tank, which controls both the vertical and the horizontal extraction system's actuator valves. Additionally, nonoperation can be a result of the UV sensor no longer being able to detect a flame emanating from the flare. Detection problems can occur when debris falls onto the sensor or when strong winds blow the flame out of the sensor's range. Temporary loss of electrical power to the main control panel can also trip circuit breakers. In the first quarter of 2001 (January 1 to March 31), the cold weather could have affected the mechanical components of the blower system. Valves, piping connects, gaskets, and hoses tend to require higher maintenance when exposed to cold and freezing conditions.

Gas Monitoring

Attachment 3 contains copies of the semimonthly gas monitoring results of the gas probes for the first quarter of 2001 (January, February, and March 2001). The gas monitoring consists of percent methane, oxygen, and carbon dioxide. Atmospheric data and pressure in inches of water in the probe are also recorded. On April 4, 2001, the gas monitoring equipment appeared to be overly sensitive to methane readings. The equipment indicated methane readings in all gas probes. Methane readings on April 4, 2001, in gas probes that have not historically indicated the presence of methane ranged from 0.1% to 0.2%. Provided that these readings are qualified due to equipment sensitivity, methane was detected one or more times at six gas probe locations: GP-10 (twice); GP-35 (four times); GP-12 (twice); GP-13 (twice); GP-20E (once); and GP-30 (once). Methane detections in these gas probes during the first quarter were attributed to the frequency of system nonoperational status, frozen cover conditions, and/or the availability of sufficient vacuum at the extraction point(s) near the respective gas probe. Vacuum head available within the system was sequentially increased during the first quarter and resulted in decreased or lack of methane detections at the five gas probes in question. Continued increases in vacuum head availability within the gas extraction system will continue to be made during the second quarter, with results being presented in the "Second Quarter Environmental Monitoring Results Report."

Groundwater Monitoring

Table 1 in Attachment 4 presents a summary of the water quality indicator parameters, and the metals that exceeded the current NR 40 Preventive Action Limits (PALs) and Enforcement Standards (ESs). Summary tables for all the groundwater quality data are also included in Attachment 5. The indicator parameter results for samples collected and analyzed for the first quarter 2001 are generally similar to historical data for the site. The trends in the inorganic and metals data indicate that there may be some impacts on groundwater quality in downgradient monitoring wells (monitoring wells MW-3,

Ms. Barb Derflinger and Mr. Mark Harder
Wisconsin Department of Natural Resources
June 1, 2001
Page 3

MW-3A, MW-11, MW-12B, MW-12C, and MW-15), but other sources in the area are also potentially contributing to the impacts, since some impacts are in sidegradient monitoring wells from the landfill (such as monitoring wells such as TG-1, MW-1, MW-1A, MW-4, MW-4A, MW-4B, MW-5, MW-5A, MW-5B, and MW-14).

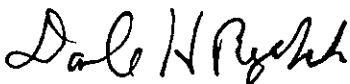
Two of the wells in the monitoring well network could not be sampled. Monitoring well MW-10 had a blockage, possibly an animal that froze to death inside the well at a depth of about 9 feet below the top of the casing. Attempts to clear the well were unsuccessful, so the well will be repaired prior to the next sampling round in September 2001. Well OM-5, one of the Oscar Mayer production wells, could not be sampled because it was not operational at the time of the monitoring round. RMT will contact Oscar Mayer about the operational status of well OM-5 prior to the next sampling round in September 2001. The direction of groundwater flow at the site is to the northwest, and downward hydraulic gradients were observed at well nests MW-1/1A, MW-5/5A/5B, and MW-13/13A; slightly upward gradients were observed at well nests MW-3/3A and MW-4/4A/4B.

In summary, water quality data collected by RMT during the first semiannual round of 2001 are interpreted to indicate that, although the landfill has had an impact on groundwater quality near the landfill, other possible sources in the vicinity make it difficult to separate the impacts and pinpoint which impacts are attributed specifically to the landfill.

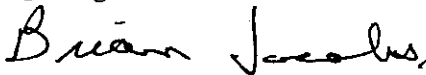
Please call us if you have any questions.

Sincerely,

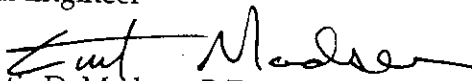
RMT, Inc.



Dale H. Rezabek, P.G., C.P.G.
Hydrogeologist



Brian S. Jacobs
Staff Engineer



Curtis D. Madsen, P.E.
Project Manager

Attachments

cc: Kathy Thompson - Environmental Monitoring Data Section, WDNR (letter w/ data tables, data diskette, and data certification)
Mike Kirchner - DCRA (letter w/ data tables only)

DANE COUNTY TRUAX LANDFILL
 LANDFILL GAS MONITORING
 JANUARY 2001

PARAMETER	UNITS	GP-10	GP-11	GP-12	GP-13	GP-15	GP-16
		18-JAN-2001	18-JAN-2001	18-JAN-2001	18-JAN-2001	18-JAN-2001	26-JAN-2001
		010118-X07	010118-X08	010118-X09	010118-X10	010118-X11	010126-X04
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.1	0.2	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	15.8	18.3	17.5	18.9	3.6	20.2
CARBON DIOXIDE, PERCENT BY VOL	%						
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	28	28	28	28	28	27
PRESSURE, BAROMETRIC	MM HG	29.89	29.89	29.89	29.89	29.89	29.65
BAROMETRIC PRESSURE TREND		0	0	0	0	0	0
GROUND CONDITIONS		SNOWY	SNOWY	SNOWY	SNOWY	SNOWY	SNOWY
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL
 LANDFILL GAS MONITORING
 FEBRUARY 2001

PARAMETER	UNITS	GP-13	GP-13	GP-15	GP-15	GP-16	GP-16
		20-FEB-2001 010220-X11	28-FEB-2001 010228-X11	20-FEB-2001 010220-X12	28-FEB-2001 010228-X12	20-FEB-2001 010220-X13	28-FEB-2001 010228-X13
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	19.4	19.4	11.0	3.4	20.2	19.9
CARBON DIOXIDE, PERCENT BY VOL	%	1.4	1.2	7.1	13.5	0.1	0.1
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	23	10	23	10	23	10
PRESSURE, BAROMETRIC	MM HG	30.04	30.36	30.04	30.36	30.04	30.36
BAROMETRIC PRESSURE TREND		+1	-1	+1	-1	+1	-1
GROUND CONDITIONS		SNOWY	SNOWY	SNOWY	SNOWY	SNOWY	SNOWY
VACUUM	IN/WATER	0.0	0.0	0.0	0.65	0.0	0.0

DANE COUNTY TRUAX LANDFILL
 LANDFILL GAS MONITORING
 FEBRUARY 2001

PARAMETER	UNITS	GP-17	GP-17	GP-21 EAST	GP-21 WEST	HES INLET	HES INLET
		20-FEB-2001 010220-X14	28-FEB-2001 010228-X14	20-FEB-2001 010220-X15	20-FEB-2001 010220-X16	20-FEB-2001 010220-X03	21-FEB-2001 010221-X03
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER					0.12	14.5
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	41.2	38.4
OXYGEN, PERCENT BY VOLUME	%	9.4	5.8	20.9	20.7	0.4	2.4
CARBON DIOXIDE, PERCENT BY VOL	%	9.5	10.5	0.1	0.2	34.6	31.9
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	23	10	23	23	23	18
PRESSURE, BAROMETRIC	MM HG	30.04	30.36	30.04	30.04	30.04	30.48
BAROMETRIC PRESSURE TREND		+1	-1	+1	+1	+1	0
GROUND CONDITIONS		SNOWY	SNOWY	SNOWY	SNOWY	SNOWY	FROZEN
VACUUM	IN/WATER	0.0	0.0	0.0	0.0		

DANE COUNTY TRUAX LANDFILL
 LANDFILL GAS MONITORING
 MARCH 2001

PARAMETER	UNITS	GP-14	GP-16	GP-16	GP-17	GP-17	GP-18
		04-APR-2001	16-MAR-2001	04-APR-2001	16-MAR-2001	04-APR-2001	16-MAR-2001
		010404-X18	010316-X20	010404-X20	010316-X21	010404-X21	010316-X22
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.2	0.0	0.2	0.0	0.2	0.0
OXYGEN, PERCENT BY VOLUME	%	19.1	20.5	20.9	20.5	20.2	10.4
CARBON DIOXIDE, PERCENT BY VOL	%	1.8	0.0	0.0	0.0	0.0	3.4
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	45	28	45	28	45	28
PRESSURE, BAROMETRIC	MM HG	30.33	29.95	30.33	29.95	30.33	29.95
BAROMETRIC PRESSURE TREND		0	+1	0	+1	0	+1
GROUND CONDITIONS		MOIST	SNOWY	MOIST	SNOWY	MOIST	SNOWY
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

TABLE 1

DANE COUNTY TRUAX LANDFILL

PARAMETERS THAT EXCEED CURRENT REGULATORY STANDARDS

Q1 2001

BEGINNING SEARCH DATE: 01-JAN-2001

ENDING SEARCH DATE: 31-MAR-2001

CHEMICAL PARAMETER	UNITS	NR140 PAL	NR140 ES	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS	EXCEEDANCE	WITHIN DM2?
ARSENIC, DISSOLVED	UG/L	5	50	MW-004A	12-MAR-2001	36		PAL	
				MW-005A	13-MAR-2001	37		PAL	
CHLORIDE	MG/L	125	250	MW-003	12-MAR-2001	350		ES	
				MW-004	12-MAR-2001	340		ES	
				MW-004B	12-MAR-2001	310		ES	
				MW-005B	13-MAR-2001	170		PAL	
				MW-005B DUP	13-MAR-2001	170		PAL	
				MW-011	13-MAR-2001	1000		PAL	Y
				MW-012B	13-MAR-2001	130		PAL	Y
				MW-012C	13-MAR-2001	140		PAL	Y
				MW-012C DUP	13-MAR-2001	140		PAL	Y
				MW-015	12-MAR-2001	210		PAL	
IRON, DISSOLVED	UG/L	150	300	MW-004A	12-MAR-2001	490		ES	
				MW-004B	12-MAR-2001	1700		ES	
				MW-005A	13-MAR-2001	300		ES	
				MW-005B	13-MAR-2001	2800		ES	
				MW-005B DUP	13-MAR-2001	2700		ES	
				TG-01	13-MAR-2001	900		ES	
LEAD, DISSOLVED	UG/L	1.5	15	MW-001	12-MAR-2001	2.9	Q	PAL	
				MW-003	12-MAR-2001	5.2	Q	PAL	
				MW-011	13-MAR-2001	7.3		PAL	Y
				MW-015	12-MAR-2001	6.0	Q	PAL	
MANGANESE, DISSOLVED	UG/L	25	50	MW-001A	12-MAR-2001	280		ES	
				MW-004B	12-MAR-2001	280		ES	
				MW-005	13-MAR-2001	500		ES	
				MW-005B	13-MAR-2001	95		ES	

TABLE 1

DANE COUNTY TRUAX LANDFILL

PARAMETERS THAT EXCEED CURRENT REGULATORY STANDARDS
Q1 2001

BEGINNING SEARCH DATE: 01-JAN-2001
ENDING SEARCH DATE: 31-MAR-2001

CHEMICAL PARAMETER	UNITS	NR140 PAL	NR140 ES	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS	EXCEEDANCE	WITHIN DMZ?
MANGANESE, DISSOLVED	UG/L	25	50	MW-005B DUP	13-MAR-2001	94		ES	
				MW-011	13-MAR-2001	180		PAL	Y
				MW-012B	13-MAR-2001	130		PAL	Y
				TG-01	13-MAR-2001	430		ES	
NITROGEN, NITRATE + NITRITE	MG/L	2	10	MW-003	12-MAR-2001	8.5		PAL	
				MW-003A	12-MAR-2001	2.1		PAL	
				MW-004	12-MAR-2001	6.4		PAL	
				MW-005	13-MAR-2001	59		ES	
				MW-012B	13-MAR-2001	6.3		PAL	Y
				MW-012C DUP	13-MAR-2001	2.0		PAL	Y
				MW-014	12-MAR-2001	2.5		PAL	

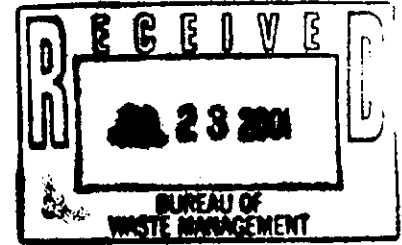


Integrated
Environmental
Solutions

744 Heartland Trail 53717-1934
P.O. Box 8923 53708-8923
Madison, WI
Telephone: 608-831-4444
Fax: 608-831-3334

July 19, 2001

Mr. Mark Harder, P.E.
South Central Region Office
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711



Office copy

Ms. Barb Derflinger, P.G.
Wisconsin Department of Natural Resources
101 South Webster Street SW/3
Madison, WI 53707

**Subject: Second Quarter 2001 Environmental Monitoring Results and Maintenance Log for
Blower/Flare System
Closed Dane County Truax Landfill; License # 03306**

Dear Mr. Harder and Ms. Derflinger:

On behalf of Dane County Regional Airport (DCRA), RMT is submitting a summary of the gas monitoring results at the Truax Landfill for the second quarter 2001, in accordance with the Department's November 18, 1999, Conditional Plan Approval letter. We are also submitting the second quarter 2001 maintenance logs for the blower/flare system in accordance with Conditions 1 and 2 of the Department's April 29, 1999, Final Cover and Landfill Gas Extraction System Construction Approval letter. Gas well monitoring is being conducted on a monthly basis, and gas probe monitoring is being conducted on a semimonthly basis (2 times per month). A copy of this letter and a computer diskette containing the gas monitoring results have been submitted to the Environmental Monitoring Data Section of the Bureau of Waste Management at the Wisconsin Department of Natural Resources (WDNR) Central Office in Madison. Groundwater sampling is now being conducted on a semiannual basis (quarters 1 and 3), and as a result, was not conducted for the second quarter.

Maintenance Log for Blower/Flare System

Attachment 1 to this letter contains Table 1, entitled "Truax Landfill Gas Extraction System Blower/Flare Operation and Run Time Log." This table indicates the date and time of restart or maintenance, the blower that was operating, the blower run time (hours), any maintenance completed, the flow rate, the tank levels for nitrogen and propane, and any pertinent comments.

Attachment 2 contains copies of the Truax Landfill Gas Extraction System Blower/Flare Maintenance Records (maintenance records). A maintenance record was compiled for each occurrence when the blower/flare was not operational for over 2 hours in any day in accordance with Condition 1 of the Department's April 29, 1999, approval letter. During the second quarter (April 1 to June 30) of 2001,

Ms. Barb Derflinger and Mr. Mark Harder
Wisconsin Department of Natural Resources
July 19, 2001
Page 2

20 such occurrences were identified. A maintenance record documenting each occurrence is provided in Attachment 2.

The nonoperational status of the blower/flare system can be attributed to a variety of causes. One typical cause is the depletion of the nitrogen in the tank, which controls both the vertical and the horizontal extraction system's actuator valves. Additionally, nonoperation can be a result of the UV sensor no longer being able to detect a flame emanating from the flare. Detection problems can occur when debris falls onto the sensor or when strong winds blow the flame out of the sensor's range. Temporary loss of electrical power to the main control panel can also trip circuit breakers. During the automatic restart sequence, certain circumstances trigger fault conditions in the system's control unit. These circumstances are most likely associated with pilot gas ignition failure. This fault condition can be and has been, addressed when restarting the blower/flare system manually; however, on occasion, the issue persists during automatic restart conditions. An evaluation is being conducted to assess the best remedy for this condition.

Gas Monitoring

Attachment 3 contains copies of the semimonthly and monthly gas monitoring results of the gas probes and wells, respectively, for the second quarter of 2001. The gas monitoring consists of percent methane, oxygen, and carbon dioxide. Atmospheric data and pressure in inches of water in the probe are also recorded. Methane was detected one or more times at six gas probe locations: GP-1D (five times); GP-5 (once); GP-15 (once); GP-16R (once); GP-18 (once); and GP-30 (four times). Methane detections in these gas probes during the first quarter were attributed to the frequency of system nonoperational status and/or the availability of sufficient vacuum at the extraction point(s) near the respective gas probe. Vacuum head available within the system was adjusted during the second quarter to minimize methane detections at the six gas probes in question. Continued adjustments in vacuum head availability within the gas extraction system will continue to be made during the third quarter, with results being presented in the "Third Quarter Environmental Monitoring Results Report." Gas probe GP-15 was not monitored in the month of April due to our understanding that GP-30 had replaced it. After clarification from the WDNR, GP-15 monitoring began in May of 2001. Gas well monitoring results were used to adjust the wellfield to enhance gas recovery. Gas well TR-4 was not monitored in the month of April due to not being able to locate the well.

Ms. Barb Derflinger and Mr. Mark Harder
Wisconsin Department of Natural Resources
July 19, 2001
Page 3

If you have any questions or comments after you review the information provided, please call me, at
(608) 831-4444.

Sincerely,

RMT, Inc.



Brian S. Jacobs
Staff Engineer



Curtis D. Madsen, P.E.
Project Manager

Attachments

cc: Kathy Thompson - Environmental Monitoring Data Section, WDNR (letter w/ data tables,
data diskette, and data certification)
Mike Kirchner - DCRA (letter w/ data tables only)
Dale Rezabek - RMT, Inc.

DANE COUNTY TRUAX LANDFILL
MONTHLY GAS MONITORING
APRIL 2001

PARAMETER	UNITS	GP-14	GP-14	GP-16	GP-16	GP-17	GP-17
		20-APR-2001 010420-X18	25-APR-2001 010425-X15	20-APR-2001 010420-X19	25-APR-2001 010425-X16	20-APR-2001 010420-X20	25-APR-2001 010425-X17
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	19.5	19.3	20.9	21.2	15.0	15.6
CARBON DIOXIDE, PERCENT BY VOL	%	2.1	2.1	0.2	0.2	4.0	2.8
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	55	45	55	45	55	45
PRESSURE, BAROMETRIC	MM HG	29.73	30.19	29.73	30.19	29.73	30.19
BAROMETRIC PRESSURE TREND		-1	+1	-1	+1	-1	+1
GROUND CONDITIONS		MOIST	MOIST	MOIST	MOIST	MOIST	MOIST
WELL OTHER							
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL
 MONTHLY GAS MONITORING
 APRIL 2001

PARAMETER	UNITS	GP-18	GP-18	GP-19E NORTH	GP-19E NORTH	GP-19E SOUTH	GP-19E SOUTH
		20-APR-2001 010420-X21	25-APR-2001 010425-X18	20-APR-2001 010420-X23	25-APR-2001 010425-X20	20-APR-2001 010420-X24	25-APR-2001 010425-X21
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	13.2	16.0	21.6	21.5	21.5	19.3
CARBON DIOXIDE, PERCENT BY VOL	%	2.8	2.3	0.6	0.0	0.0	0.3
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	55	45	55	45	55	45
PRESSURE, BAROMETRIC	MM HG	29.73	30.19	29.73	30.19	29.73	30.19
BAROMETRIC PRESSURE TREND		-1	+1	-1	+1	-1	+1
GROUND CONDITIONS		MOIST	MOIST	MOIST	MOIST	MOIST	MOIST
WELL OTHER							
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL
MONTHLY GAS MONITORING
MAY 2001

PARAMETER	UNITS	GP-13	GP-14	GP-14	GP-15	GP-15	GP-16
		30-MAY-2001 010530-X17	18-MAY-2001 010518-X18	30-MAY-2001 010530-X18	18-MAY-2001 010518-X19	30-MAY-2001 010530-X19	18-MAY-2001 010518-X20
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.1	0.0	0.1
OXYGEN, PERCENT BY VOLUME	%	18.5	19.4	18.8	22.1	21.6	22.1
CARBON DIOXIDE, PERCENT BY VOL	%	1.6	2.4	2.6	0.1	0.1	0.1
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	64	70	64	70	64	70
PRESSURE, BAROMETRIC	MM HG	30.20	29.89	30.20	29.89	30.20	29.89
BAROMETRIC PRESSURE TREND		-1	+1	-1	+1	-1	+1
GROUND CONDITIONS		DRY	DRY	DRY	DRY	DRY	DRY
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL
MONTHLY GAS MONITORING
MAY 2001

PARAMETER	UNITS	GP-16	GP-17	GP-17	GP-18	GP-18	GP-19E NORTH
		30-MAY-2001 010530-X20	18-MAY-2001 010518-X21	30-MAY-2001 010530-X21	18-MAY-2001 010518-X22	30-MAY-2001 010530-X22	18-MAY-2001 010518-X24
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.1	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	20.7	22.2	21.7	15.6	16.2	21.3
CARBON DIOXIDE, PERCENT BY VOL	%	0.7	0.0	0.0	2.7	2.3	0.0
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	64	70	54	70	64	70
PRESSURE, BAROMETRIC	MM HG	30.20	29.89	30.20	29.89	30.20	29.89
BAROMETRIC PRESSURE TREND		-1	+1	-1	+1	-1	+1
GROUND CONDITIONS		DRY	DRY	DRY	DRY	DRY	DRY
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL

MONTHLY GAS MONITORING

JUNE 2001

PARAMETER	UNITS	GP-14	GP-14	GP-15	GP-15	GP-16	GP-16
		07-JUN-2001	22-JUN-2001	07-JUN-2001	22-JUN-2001	07-JUN-2001	22-JUN-2001
		010607-X18	010622-X18	010607-X19	010622-X19	010607-X20	010622-X20
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	18.9	17.6	21.4	21.1	18.2	20.3
CARBON DIOXIDE, PERCENT BY VOL	%	2.6	3.1	0.0	0.1	2.0	0.7
FLOW RATE, GAS	CFM						
TEMPERATURE, AIR	DEG F	65	70	65	70	65	70
PRESSURE, BAROMETRIC	MM HG	30.06	30.01	30.06	30.01	30.06	30.01
BAROMETRIC PRESSURE TREND		+1	-1	+1	-1	+1	-1
GROUND CONDITIONS		MOIST	DRY	MOIST	DRY	MOIST	DRY
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL
MONTHLY GAS MONITORING
JUNE 2001

PARAMETER	UNITS	GP-17	GP-17	GP-18	GP-18	GP-19E NORTH	GP-19E NORTH
		07-JUN-2001	22-JUN-2001	07-JUN-2001	22-JUN-2001	07-JUN-2001	22-JUN-2001
		010607-X21	010622-X21	010607-X22	010622-X22	010607-X24	010622-X24
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	21.7	21.2	15.0	14.3	21.3	20.9
CARBON DIOXIDE, PERCENT BY VOL	%	0.0	0.2	2.5	3.3	0.0	0.0
FLOW RATE, GAS	CFM						
TEMPERATURE, AIR	DEG F	65	70	65	70	65	70
PRESSURE, BAROMETRIC	MM HG	30.06	30.01	30.06	30.01	30.06	30.01
BAROMETRIC PRESSURE TREND		+1	-1	+1	-1	+1	-1
GROUND CONDITIONS		MOIST	DRY	MOIST	DRY	MOIST	DRY
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

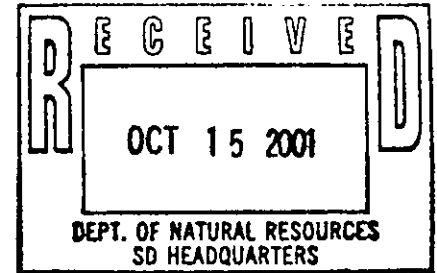


Integrated
Environmental
Solutions

744 Heartland Trail 53717-1934
P.O. Box 8923 53708-8923
Madison, WI
Telephone: 608-831-4444
Fax: 608-831-3334

October 12, 2001

Mr. Mark Harder, P.E.
South Central Region Office
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711



Ms. Barb Derflinger, P.G.
Wisconsin Department of Natural Resources
101 South Webster Street SW/3
Madison, WI 53707

**Subject: Third Quarter 2001 Environmental Monitoring Results and Maintenance Log for
Blower/Flare System
Closed Dane County Truax Landfill; License # 03306**

Dear Mr. Harder and Ms. Derflinger:

On behalf of Dane County Regional Airport (DCRA), RMT is submitting a summary of the gas monitoring results at the Truax Landfill for the third quarter 2001, in accordance with the Department's November 18, 1999, Conditional Plan Approval letter. We are also submitting the third quarter 2001 maintenance logs for the blower/flare system in accordance with Conditions 1 and 2 of the Department's April 29, 1999, Final Cover and Landfill Gas Extraction System Construction Approval letter. Gas well monitoring is being conducted on a monthly basis, and gas probe monitoring is being conducted on a semimonthly basis (2 times per month). A copy of this letter and a computer diskette containing the gas monitoring results have been submitted to the Environmental Monitoring Data Section of the Bureau of Waste Management at the Wisconsin Department of Natural Resources (WDNR) Central Office in Madison. Groundwater sampling was conducted in the third quarter; however, the analytical results were not available at the time of this submission. These data will be submitted when they become available.

Maintenance Log for Blower/Flare System

Attachment 1 to this letter contains Table 1, entitled "Truax Landfill Gas Extraction System Blower/Flare Operation and Run Time Log." This table indicates the date and time of restart or maintenance, the blower that was operating, the blower run time (hours), any maintenance completed, the flow rate, the tank levels for nitrogen and propane, and any pertinent comments.

Attachment 2 contains copies of the Truax Landfill Gas Extraction System Blower/Flare Maintenance Records (maintenance records). A maintenance record was compiled for each occurrence when the blower/flare was not operational for over 2 hours in any day in accordance with Condition 1 of the Department's April 29, 1999, approval letter. During the third quarter (July 1 to September 30)

of 2001, six such occurrences were identified. A maintenance record documenting each occurrence is provided in Attachment 2.

The nonoperational status of the blower/flare system can be attributed to a variety of causes. One typical cause is the depletion of the nitrogen in the tank, which controls both the vertical and the horizontal extraction system's actuator valves. Additionally, nonoperation can be a result of the UV sensor no longer being able to detect a flame emanating from the flare. Detection problems can occur when debris falls onto the sensor or when strong winds blow the flame out of the sensor's range. Temporary loss of electrical power to the main control panel can also trip circuit breakers. During the automatic restart sequence, certain circumstances trigger fault conditions in the system's control unit. These circumstances are most likely associated with pilot gas ignition failure. During September, the igniter assembly components (which included the spark generator) were replaced in an attempt to improve the reliability of the pilot gas ignition system. The technical representative from the flare manufacturer indicated that the extensive "downtime" of the flare was primarily due to a weak spark being generated. The technical representative indicated that a spark generator failure in the industry is very rare, and that he had not seen a failure in over 15 years of flare service. Since completing these repairs, the system's control unit has not experienced a fault condition related to pilot gas ignition failure. Thus, we anticipate a high percentage of flare "run time" from this date forward.

Gas Monitoring

Attachment 3 contains copies of the semimonthly and monthly gas monitoring results of the gas probes and wells, respectively, for the third quarter of 2001. The gas monitoring consists of percent methane, oxygen, and carbon dioxide. Atmospheric data, pressure in inches of water, and differential pressure in the probe and wells, are also recorded. On July 12, 2001, the portable gas monitoring device appeared to be overly sensitive to methane readings. The device indicated methane readings in 19 of the 27 gas probes. Methane readings on July 12, 2001, in gas probes that have not historically indicated the presence of methane, ranged from 0.1% to 0.2%. Provided that these readings are qualified due to the sensitivity of the monitoring device, methane was detected one or more times at four gas probe locations: GP-1D (four times), GP-1SR (five times), GP-17 (once), and GP-30 (five times). Methane detections in these gas probes during the third quarter were attributed to the frequency of the flare system's nonoperational status and/or the availability of sufficient vacuum at the extraction point(s) near the respective gas probe along the western side, as a result of the accumulation of increased liquids in the condensate well, due to a blown fuse in the pump control panel. Vacuum head available within the system was adjusted during the third quarter to minimize methane detections at the six gas probes in question. Continued adjustments in vacuum head availability within the gas extraction system will be made as necessary during the fourth quarter, with results being presented in the "Fourth Quarter Environmental Monitoring Results Report." Gas

Ms. Barb Derflinger and Mr. Mark Harder
Wisconsin Department of Natural Resources
October 12, 2001
Page 3

probes GP-7, GP-8R, and GP-16R were monitored on September 28, 2001, due to equipment malfunction. Gas well monitoring results were used to adjust the wellfield to maximize gas recovery.

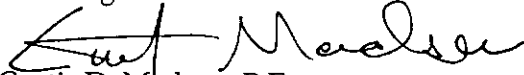
If you have any questions or comments after you review the information provided, please call me, at (608) 831-4444.

Sincerely,

RMT, Inc.



Brian S. Jacobs
Staff Engineer



Curtis D. Madsen, P.E.
Project Manager

Attachments

cc: Kathy Thompson - Environmental Monitoring Data Section, WDNR
(letter w/ data tables, data diskette, and data certification)
Mike Kirchner - DCRA (letter w/ data tables only)
Dale Rezabek - RMT, Inc.

DANE COUNTY TRUAX LANDFILL
 MONTHLY GAS MONITORING
 JULY 2001

PARAMETER	UNITS	GP-13	GP-14	GP-14	GP-15	GP-15	GP-16
		25-JUL-2001	12-JUL-2001	25-JUL-2001	12-JUL-2001	25-JUL-2001	12-JUL-2001
		010725-X17	010712-X18	010725-X18	010712-X19	010725-X19	010712-X20
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.2	0.0	0.2	0.0	0.2
OXYGEN, PERCENT BY VOLUME	%	18.8	19.0	20.4	21.9	21.6	22.0
CARBON DIOXIDE, PERCENT BY VOL	%	2.6	3.0	1.9	0.2	0.1	0.2
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	68	80	68	80	68	80
PRESSURE, BAROMETRIC	MM HG	762.51	763.27	762.51	763.27	762.51	763.27
BAROMETRIC PRESSURE TREND		+1	+1	+1	+1	+1	+1
GROUND CONDITIONS		MOIST	DRY	MOIST	DRY	MOIST	DRY
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL
 MONTHLY GAS MONITORING
 JULY 2001

PARAMETER	UNITS	GP-16	GP-17	GP-17	GP-18	GP-18	GP-19E NORTH
		25-JUL-2001	12-JUL-2001	25-JUL-2001	12-JUL-2001	25-JUL-2001	12-JUL-2001
		010725-X20	010712-X21	010725-X21	010712-X22	010725-X22	010712-X24
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.1	0.0	0.2	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	21.6	19.8	21.7	15.9	14.4	21.5
CARBON DIOXIDE, PERCENT BY VOL	%	0.0	1.4	0.0	2.8	3.6	0.0
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	68	80	68	80	68	80
PRESSURE, BAROMETRIC	MM HG	762.51	763.27	762.51	763.27	762.51	763.27
BAROMETRIC PRESSURE TREND		+1	+1	+1	+1	+1	+1
GROUND CONDITIONS		MOIST	DRY	MOIST	DRY	MOIST	DRY
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL
MONTHLY GAS MONITORING
AUGUST 2001

PARAMETER	UNITS	GP-13	GP-14	GP-14	GP-15	GP-15	GP-16
		30-AUG-2001	22-AUG-2001	30-AUG-2001	22-AUG-2001	30-AUG-2001	22-AUG-2001
		010830-X17	010822-X18	010830-X18	010822-X19	010830-X19	010822-X20
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	20.3	18.1	17.5	20.6	21.3	20.8
CARBON DIOXIDE, PERCENT BY VOL	%	0.6	3.1	3.7	0.2	0.2	0.0
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	75	70	75	70	75	70
PRESSURE, BAROMETRIC	MM HG	757	759.46	757	759.46	757	759.46
BAROMETRIC PRESSURE TREND		-1	+1	-1	+1	-1	+1
GROUND CONDITIONS		AVERAGE	MOIST	AVERAGE	MOIST	AVERAGE	MOIST
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL
 MONTHLY GAS MONITORING
 AUGUST 2001

PARAMETER	UNITS	GP-16	GP-17	GP-17	GP-18	GP-18	GP-19E NORTH
		30-AUG-2001	22-AUG-2001	30-AUG-2001	22-AUG-2001	30-AUG-2001	22-AUG-2001
		010830-X20	010822-X21	010830-X21	010822-X22	010830-X22	010822-X24
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.1	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	21.0	19.9	21.5	15.5	15.9	20.8
CARBON DIOXIDE, PERCENT BY VOL	%	0.6	0.8	0.2	2.7	2.7	0.1
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	75	70	75	70	75	70
PRESSURE, BAROMETRIC	MM HG	757	759.46	757	759.46	757	759.46
BAROMETRIC PRESSURE TREND		-1	+1	-1	+1	-1	+1
GROUND CONDITIONS		AVERAGE	MOIST	AVERAGE	MOIST	AVERAGE	MOIST
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0

DANE COUNTY TRUAX LANDFILL
MONTHLY GAS MONITORING
SEPTEMBER 2001

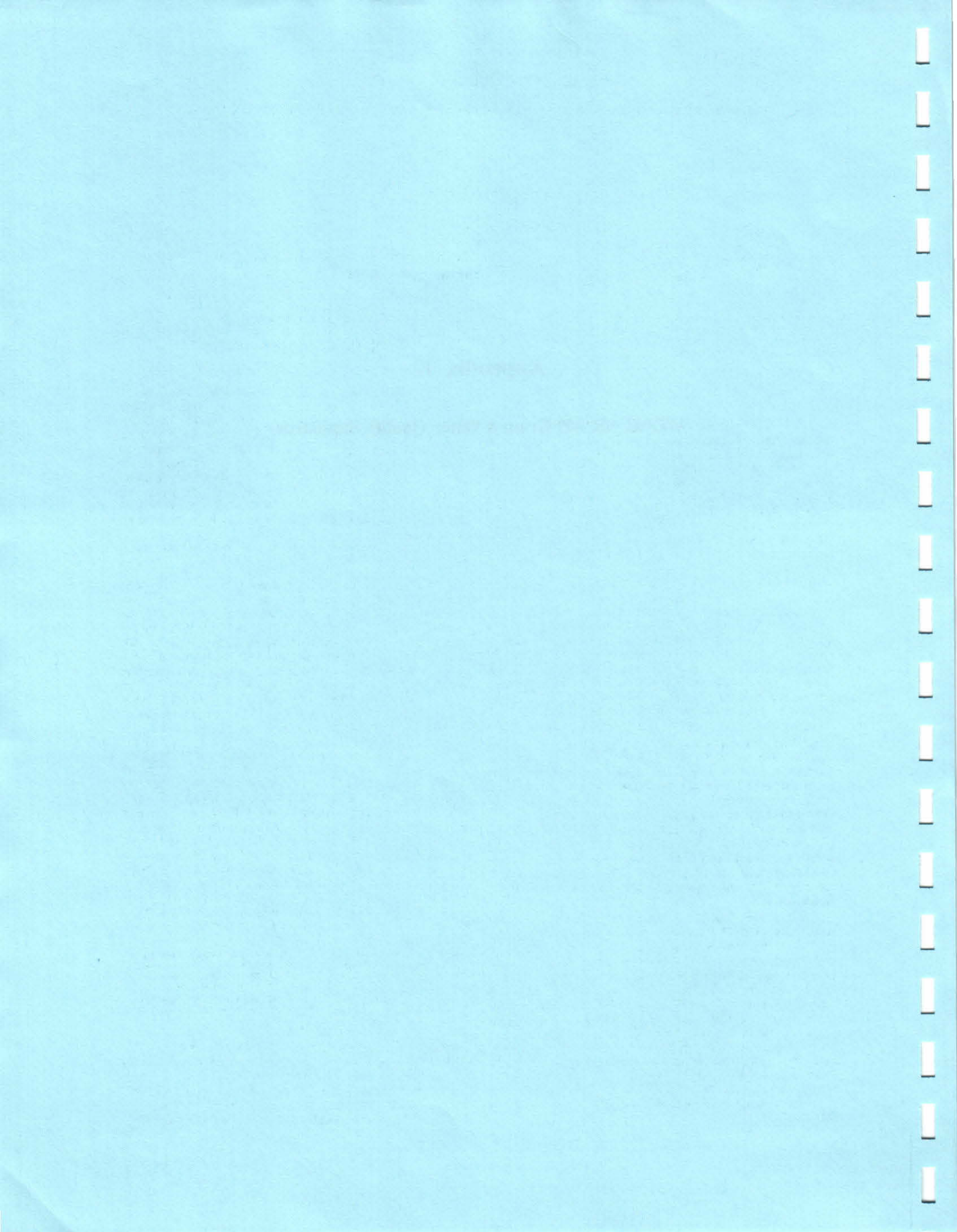
PARAMETER	UNITS	GP-13	GP-14	GP-14	GP-15	GP-15	GP-16
		28-SEP-2001	26-SEP-2001	28-SEP-2001	26-SEP-2001	28-SEP-2001	26-SEP-2001
		010928-X17	010926-X18	010928-X18	010926-X19	010928-X19	010926-X20
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%	0.0	0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%	17.7	16.5	16.7	20.4	20.6	20.4
CARBON DIOXIDE, PERCENT BY VOL	%	2.4	3.6	3.6	0.2	0.2	0.4
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F	50	56	50	56	50	56
PRESSURE, BAROMETRIC	MM HG	768.9	762.3	768.9	762.3	768.9	762.3
BAROMETRIC PRESSURE TREND		+1	-1	+1	-1	+1	-1
GROUND CONDITIONS	AVE	AVE	AVE	AVE	AVE	AVE	AVE
VACUUM	IN/WATER	0.0	0.0	0.0	0.0	0.0	0.0
WELL NOT SAMPLED							

DANE COUNTY TRUAX LANDFILL
 MONTHLY GAS MONITORING
 SEPTEMBER 2001

PARAMETER	UNITS	GP-16	GP-17	GP-17	GP-18	GP 18	GP-19E NORTH
		28 SEP-2001	26-SEP-2001	28-SEP-2001	26-SEP-2001	28-SEP-2001	26-SEP-2001
		010928-X20	010926-X21	010928-X21	010926-X22	010928-X22	010926-X24
PRESSURE AFTER ORIFICE PLATE	IN/WATER						
WELL SIDE PRESSURE	IN/WATER						
METHANE, PERCENT BY VOLUME	%		0.0	0.0	0.0	0.0	0.0
OXYGEN, PERCENT BY VOLUME	%		17.9	20.6	13.0	19.0	20.6
CARBON DIOXIDE, PERCENT BY VOL	%		1.6	0.1	3.6	1.1	0.0
TEMPERATURE, GAS	DEG F						
FLOW RATE, GAS	CFM						
VALVE OPENING	% OPEN						
TEMPERATURE, AIR	DEG F		56	50	56	50	56
PRESSURE, BAROMETRIC	MM HG		762.3	768.9	762.3	768.9	762.3
BAROMETRIC PRESSURE TREND			-1	+1	-1	+1	-1
GROUND CONDITIONS			AVE	AVE	AVE	AVE	AVE
VACUUM	IN/WATER		0.0	0.0	0.0	0.0	0.0
WELL NOT SAMPLED		00000					

Appendix K

WDNR NR 140 Ground Water Quality Standards



Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Chapter NR 140

GROUNDWATER QUALITY

Subchapter I — General

- NR 140.01 Purpose.
- NR 140.02 Regulatory framework.
- NR 140.03 Applicability.
- NR 140.05 Definitions.

Subchapter II — Groundwater Quality Standards

- NR 140.10 Public health related groundwater standards.
- NR 140.12 Public welfare related groundwater standards.
- NR 140.14 Statistical procedures.

- NR 140.16 Monitoring and laboratory data requirements.

Subchapter III — Evaluation and Response Procedures

- NR 140.20 Indicator parameter groundwater standards.
- NR 140.22 Point of standards application for design and compliance.
- NR 140.24 Responses when a preventive action limit is attained or exceeded.
- NR 140.26 Responses when an enforcement standard is attained or exceeded.
- NR 140.27 Responses when an enforcement standard is attained or exceeded at a location other than a point of standards application.
- NR 140.28 Exemptions.

Subchapter I — General

NR 140.01 Purpose. The purpose of this chapter is to establish groundwater quality standards for substances detected in or having a reasonable probability of entering the groundwater resources of the state; to specify scientifically valid procedures for determining if a numerical standard has been attained or exceeded; to specify procedures for establishing points of standards application, and for evaluating groundwater monitoring data; to establish ranges of responses the department may require if a groundwater standard is attained or exceeded; and to provide for exemptions for facilities, practices and activities regulated by the department.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85.

NR 140.02 Regulatory framework. (1) This chapter supplements the regulatory authority elsewhere in the statutes and administrative rules. The department will continue to exercise the powers and duties in those regulatory programs, consistent with the enforcement standards and preventive action limits for substances in groundwater under this chapter. This chapter provides guidelines and procedures for the exercise of regulatory authority which is established elsewhere in the statutes and administrative rules, and does not create independent regulatory authority.

(2) The department may adopt regulations which establish specific design and management criteria for regulated facilities or activities, if the regulations will ensure that the regulated facilities and activities will not cause the concentration of a substance in groundwater affected by the facilities or activities to exceed the enforcement standards and preventive action limits under this chapter at a point of standards application. The department may adopt more stringent regulations under authority elsewhere in the statutes based on the best currently available technology for regulated activities and practices which ensure a greater degree of groundwater protection or when necessary to comply with state or federal laws.

(3) Preventive action limits serve to inform the department of potential groundwater contamination problems, establish the level of groundwater contamination at which the department is required to commence efforts to control the contamination and provide a basis for design and management practice criteria in administrative rules. Preventive action limits are applicable both to controlling new releases of contamination as well as to restoring groundwater quality contaminated by past releases of contaminants. Although a preventive action limit is not intended to always require remedial action, activities affecting groundwater must be regulated to minimize the level of substances to the extent technically and economically feasible, and to maintain compliance with the preventive action limits unless compliance with the preventive action limits is not technically and economically feasible.

(4) The department may take any actions within the context of regulatory programs established in statutes or rules outside of this chapter, if those actions are necessary to protect public health and welfare or prevent a significant damaging effect on groundwater or surface water quality for present or future consumptive or non-consumptive uses, whether or not an enforcement standard and preventive action limit for a substance have been adopted under this chapter. Nothing in this chapter authorizes an impact on groundwater quality which would cause surface water quality standards contained in chs. NR 102 to 105 to be attained or exceeded.

History: Cr. Register, January, 1992, No. 433, eff. 2-1-92; reprinted to restore dropped copy, Register, March, 1992, No. 435.

NR 140.03 Applicability. This subchapter and subch. II apply to all facilities, practices and activities which may affect groundwater quality and which are regulated under chs. 85, 93, 94, 101, 145, 281, 283, 287, 289, 291 and 292, Stats., by the department of agriculture, trade and consumer protection, the department of commerce, the department of transportation, or the department of natural resources, as well as to facilities, practices and activities which may affect groundwater quality which are regulated by other regulatory agencies. Health-related enforcement standards adopted in s. NR 140.10 also apply to bottled drinking water manufactured, bottled, sold or distributed in this state as required by s. 97.34 (2) (b), Stats., and to determining eligibility for the well compensation program under s. 281.75, Stats. Subchapter III applies to all facilities, practices and activities which may affect groundwater quality and which are regulated by the department under ch. 281, 283, 287, 289, 291, 292, 295 or 299, Stats. This chapter does not apply to any facilities, practices or activities on a prospecting site or a mining site because those facilities, practices and activities are subject to the groundwater quality requirements of chs. NR 131, 132 and 182. The department may promulgate new rules or amend rules governing facilities, practices or activities regulated under ch. 293, Stats., if the department determines that the amendment or promulgation of rules is necessary to protect public health, safety or welfare. The requirements of this chapter are in addition to the requirements of any other statutes and rules.

Note: The groundwater standards in this chapter do not replace the maximum contaminant levels applicable to public water systems contained in ch. NR 809. Drinking water maximum contaminant levels and health advisory levels may take into account such factors as treatment costs and feasibility for public water systems.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. Register, December, 1998, No. 516, eff. 1-1-99; correction made under s. 13.93 (2m) (b) 7, Stats., Register, March, 2000, No. 531.

NR 140.05 Definitions. (1) "Accuracy" means the closeness of a measured value to its generally accepted value or its value based upon an accepted reference standard.

(1m) "Alternative concentration limit" means the concentration of a substance in groundwater established by the department for a site to replace a preventive action limit or enforcement stan-

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

dard or both, from Table 1 or 2, when an exemption is granted in accordance with s. NR 140.28.

(1s) "Approval" means written acceptance by the department of a plan, report or other document that has been submitted to the department for review.

(2) "Attain or exceed" means that the concentration of a substance is determined to be equal to or greater than the preventive action limit or enforcement standard for that substance.

(3) "Background water quality" or "background concentration" means groundwater quality at or near a facility, practice or activity which has not been affected by that facility, practice or activity.

(4) "Certified laboratory" means a laboratory which performs tests for hire in connection with a covered program and which receives certification under s. 299.11 (7), Stats., or receives reciprocal recognition under s. 299.11 (5), Stats.

(5) "Department" means the department of natural resources.

(6) "Design management zone" means a 3-dimensional boundary surrounding each regulated facility, practice or activity established under s. NR 140.22 (3).

(7) "Enforcement standard" means a numerical value expressing the concentration of a substance in groundwater which is adopted under s. 160.07, Stats., and s. NR 140.10 or s. 160.09, Stats., and s. NR 140.12.

(8) "Facility, practice or activity" means any source or potential source of a substance which is detected in or has a reasonable probability of entering the groundwater resources of the state.

(9) "Groundwater" means any of the waters of the state, as defined in s. 281.01 (18), Stats., occurring in a saturated subsurface geological formation of rock or soil.

(10) "Indicator parameter" means a substance for which a preventive action limit has been established under s. NR 140.20, which is used to indicate the potential for a preventive action limit established under s. NR 140.10 or 140.12 to be attained or exceeded and for which an enforcement standard has not been established under s. NR 140.10 or 140.12.

(10e) "Infiltration" means the underground emplacement of substances or remedial material, or both, into an excavation that is wider than deep so as to percolate or move through unsaturated material to groundwater.

(10s) "Injection" means the underground emplacement of substances or remedial material, or both, into a borehole or other excavation that is deeper than wide so as to percolate or move through unsaturated material to groundwater or to enter groundwater directly.

(11) "Land disposal system" means a facility for disposing of liquid wastes consisting of:

- (a) An absorption or seepage pond system,
- (b) A ridge and furrow system;
- (c) A spray irrigation system,
- (d) An overland flow system,
- (e) A subsurface field absorption system,
- (f) A land spreading system, or
- (g) Any other land area receiving liquid waste discharges.

(12) "Limit of detection" means the lowest concentration level that can be determined to be statistically different from a blank.

(13) "Limit of quantitation" means the level above which quantitative results may be obtained with a specified degree of confidence.

Note: The limit of quantitation is 10/3 or 3.333 times the limit of detection.

(14) "Monitoring" means all procedures used to collect data on groundwater, surface water or soils.

(14m) "Natural attenuation" means the reduction in the concentration and mass of a substance and its breakdown products in groundwater, due to naturally occurring physical, chemical, and

biological processes without human intervention or enhancement. These processes include, but are not limited to, dispersion, diffusion, sorption and retardation, and degradation processes such as biodegradation, abiotic degradation and radioactive decay.

(15) "Point of standards application" means the specific location, depth or distance from a facility, activity or practice at which the concentration of a substance in groundwater is measured for purposes of determining whether a preventive action limit or an enforcement standard has been attained or exceeded.

(16) "Precision" means the closeness of repeated measurements of the same parameter within a sample.

(17) "Preventive action limit" means a numerical value expressing the concentration of a substance in groundwater which is adopted under s. 160.15, Stats., and s. NR 140.10, 140.12 or 140.20.

(18) "Property boundary" means the boundary of the total contiguous parcel of land owned or leased by a common owner or lessor, regardless of whether public or private roads run through the parcel.

(19) "Registered laboratory" means a laboratory which is registered under s. 299.11 (8), Stats., or receives reciprocal recognition under s. 299.11 (5), Stats.

(20) "Regulatory agency" means the department of agriculture, trade and consumer protection, the department of commerce, the department of transportation, the department of natural resources and other state agencies which regulate activities, facilities or practices which are related to substances which have been detected in or have reasonable probability of entering the groundwater resources of the state.

(20h) "Remedial action" means a response which is taken to achieve compliance with groundwater quality standards established under this chapter. This term includes, but is not limited to, actions designed to prevent or minimize the further discharge or release of substances to groundwater and actions designed to renovate or restore groundwater quality.

(20k) "Remedial material" means any solid, liquid, semi-solid or gaseous material, either naturally occurring or manmade, in its original form or as a metabolite or degradation product, or naturally occurring non-pathogenic biological organisms which have not undergone human induced genetic alteration, which enhances the restoration of soil or groundwater quality, or both.

(20m) "Response" means any action taken to respond to an attainment or exceedance of a preventive action limit or enforcement standard as required by s. NR 140.24 or 140.26.

Note: A response may include a remedial action.

(21) "Substance" means any solid, liquid, semisolid, dissolved solid or gaseous material, naturally occurring or man-made chemical, parameter for measurement of water quality or biological organism which, in its original form, or as a metabolite or a degradation or waste product, may decrease the quality of groundwater.

(22) "Wastewater and sludge storage or treatment lagoon" means a natural or man-made containment structure, constructed primarily of earthen materials for the treatment or storage of wastewater or sludge, which is not a land disposal system.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; cr. (1m), am. (7), (17) and (18), Register, October, 1988, No. 394, eff. 11-1-88; am. (6), cr. (20h) and (20m), Register, March, 1994, No. 459, eff. 4-1-94; cr. (1a), (10e), (10s), (20k), r. and rec. (12), (13), Register, August, 1995, No. 476, eff. 9-1-95; cr. (14m), Register, October, 1996, No. 490, eff. 11-1-96; am. (20), Register, December, 1998, No. 516, eff. 1-1-99; correction in (9) made under s. 13.93 (2m) (b) 7., Stats., Register, April, 2001, No. 544.

Subchapter II — Groundwater Quality Standards

NR 140.10 Public health related groundwater standards. The groundwater quality standards for substances of public health concern are listed in Table 1.

Note: For all substances that have carcinogenic, mutagenic or teratogenic properties or interactive effects, the preventive action limit is 10% of the enforcement standard. The preventive action limit is 20% of the enforcement standard for all other sub-

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

stances that are of public health concern. Enforcement standards and preventive action limits for additional substances will be added to Table I as recommendations are developed pursuant to ss. 160.07, 160.13 and 160.15, Stats.

Table 1
Public Health Groundwater Quality Standards

Substance ¹	Enforcement Standard (micrograms per liter – except as noted)	Preventive Action Limit (micrograms per liter – except as noted)
Acetone	1000	200
Alachlor	2	0.2
Aldicarb	10	2
Antimony	6	1.2
Anthracene	3000	600
Arsenic	50	5
Asbestos	7 million fibers per liter (MFL)	0.7 MFL
Atrazine, total chlorinated residues	3 ²	0.3 ²
Bacteria, Total Coliform	0 ³	0 ³
Barium	2 milligrams/liter (mg/l)	0.4 mg/l
Bentazon	300	60
Benzene	5	0.5
Benzo(b)fluoranthene	0.2	0.02
Benzo(a)pyrene	0.2	0.02
Beryllium	4	0.4
Boron	960	190
Bromodichloromethane	0.6	0.06
Bromoform	4.4	0.44
Bromomethane	10	1
Butylate	67	6.7
Cadmium	5	0.5
Carbaryl	960	192
Carbofuran	40	8
Carbon disulfide	1000	200
Carbon tetrachloride	5	0.5
Chloramben	150	30
Chlordane	2	0.2
Chloroethane	400	80
Chloroform	6	0.6
Chloromethane	3	0.3
Chromium	100	10
Chrysene	0.2	0.02
Cobalt	40	8
Copper	1300	130
Cyanazine	1	0.1
Cyanide	200	40
Dacthal	4 mg/l	0.8 mg/l
1,2-Dibromoethane (EDB)	0.05	0.005
Dibromochloromethane	60	6
1,2-Dibromo-3-chloropropane (DBCP)	0.2	0.02
Dibutyl phthalate	100	20
Dicamba	300	60
1,2-Dichlorobenzene	600	60
1,3-Dichlorobenzene	1250	125
1,4-Dichlorobenzene	75	15
Dichlorodifluoromethane	1000	200
1,1-Dichloroethane	850	85

Table 1 (cont.)
Public Health Groundwater Quality Standards

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Table 1 (cont.)
Public Health Groundwater Quality Standards

Substance ¹	Enforcement Standard (micrograms per liter – except as noted)	Preventive Action Limit (micrograms per liter – except as noted)
1,2-Dichloroethane	5	0.5
1,1-Dichloroethylene	7	0.7
1,2-Dichloroethylene (cis)	70	7
1,2-Dichloroethylene (trans)	100	20
2,4-Dichlorophenoxyacetic Acid (2,4-D)	70	7
1,2-Dichloropropane	5	0.5
1,3-Dichloropropene (cis/trans)	0.2	0.02
Di (2-ethylhexyl) phthalate	6	0.6
Dimethoate	2	0.4
2,4-Dinitrotoluene	0.05	0.005
2,6-Dinitrotoluene	0.05	0.005
Dinoseb	7	1.4
Dioxin (2, 3, 7, 8-TCDD)	0.00003	0.000003
Endrin	2	0.4
EPTC	250	50
Ethylbenzene	700	140
Ethylene glycol	7 mg/l	0.7 mg/l
Fluoranthene	400	80
Fluorene	400	80
Fluoride	4 mg/l	0.8 mg/l
Fluorotrichloromethane	3490	698
Formaldehyde	1000	100
Heptachlor	0.4	0.04
Heptachlor epoxide	0.2	0.02
Hexachlorobenzene	1	0.1
N-Hexane	600	120
Hydrogen sulfide	30	6
Lead	15	1.5
Lindane	0.2	0.02
Mercury	2	0.2
Methanol	5000	1000
Methoxychlor	40	4
Methylene chloride	5	0.5
Methyl ethyl ketone (MEK)	460	90
Methyl isobutyl ketone (MIBK)	500	50
Methyl tert-butyl ether (MTBE)	60	12
Metolachlor	15	1.5
Metribuzin	250	50
Monochlorobenzene	100	20
Naphthalene	40	8
Nickel	100	20
Nitrate (as N)	10 mg/l	2 mg/l
Nitrate + Nitrite (as N)	10 mg/l	2 mg/l
Nitrite (as N)	1 mg/l	0.2 mg/l
N-Nitrosodiphenylamine	7	0.7
Pentachlorophenol (PCP)	1	0.1
Phenol	6 mg/l	1.2 mg/l
Picloram	500	100
Polychlorinated biphenyls (PCBs)	0.03	0.003
Prometon	90	18
Pyrene	250	50
Pyridine	10	2

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Table 1 (cont.)
Public Health Groundwater Quality Standards

Substance ¹	Enforcement Standard (micrograms per liter – except as noted)	Preventive Action Limit (micrograms per liter – except as noted)
Selenium	50	10
Silver	50	10
Simazine	4	0.4
Styrene	100	10
1,1,1,2-Tetrachloroethane	70	7
1,1,2,2-Tetrachloroethane	0.2	0.02
Tetrachloroethylene	5	0.5
Tetrahydrofuran	50	10
Thallium	2	0.4
Toluene	1 mg/l	0.2 mg/l
Toxaphene	3	0.3
1,2,4-Trichlorobenzene	70	14
1,1,1-Trichloroethane	200	40
1,1,2-Trichloroethane	5	0.5
Trichloroethylene (TCE)	5	0.5
2,4,5-Trichlorophenoxy-propionic acid (2,4,5-TP)	50	5
1,2,3-Trichloropropane	60	12
Trifluralin	7.5	0.75
Trimethylbenzenes (1,2,4- and 1,3,5- combined)	480	96
Vanadium	30	6
Vinyl chloride	0.2	0.02
Xylene ⁴	10 mg/l	1 mg/l

¹ Appendix 1 contains Chemical Abstract Service (CAS) registry numbers, common synonyms and trade names for most substances listed in Table 1.

² Total chlorinated atrazine residues includes parent compound and the following metabolites of health concern: 2-chloro-4-amino-6-isopropylamino-s-triazine (formerly deethylatrazine), 2-chloro-4-amino-6-ethylamino-s-triazine (formerly deisopropylatrazine) and 2-chloro-4,6-diamino-s-triazine (formerly diaminoatrazine).

³ Total coliform bacteria may not be present in any 100 ml sample using either the membrane filter (MF) technique, the presence-absence (P-A) coliform test, the minimal medium ONPG-MUG (MMO-MUG) test or not present in any 10 ml portion of the 10-tube multiple tube fermentation (MTF) technique.

⁴ Xylene includes meta-, ortho-, and para-xylene combined. The preventive action limit has been set at a concentration that is intended to address taste and odor concerns associated with this substance.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. table 1, Register, October, 1988, No. 394, eff. 11-1-88; am. table 1, Register, September, 1990, No. 417, eff. 10-1-90; am. Register, January, 1992, No. 433, eff. 2-1-92; am. Table 1, Register, March, 1994, No. 459, eff. 4-1-94; am. Table 1, Register, August, 1995, No. 476, eff. 9-1-95; am. Table 1, Register, December, 1998, No. 516, eff. 1-1-99; am. Table 1, boron, Register, December, 1998, No. 516, eff. 12-31-99; am. Table 1, Register, March, 2000, No. 531, eff. 4-1-00.

NR 140.12 Public welfare related groundwater standards. The groundwater quality standards for substances of public welfare concern are listed in Table 2.

Note: For each substance of public welfare concern, the preventive action limit is 50% of the established enforcement standard.

Table 2
Public Welfare Groundwater Quality Standards

Substance	Enforcement Standard (milligrams per liter – except as noted)	Preventive Action Limit (milligrams per liter – except as noted)
Chloride	250	125
Color	15 color units	7.5 color units
Foaming agents MBAS (Methylene-Blue Active Substances)	0.5	0.25
Iron	0.3	0.15
Manganese	0.05	0.025
Odor	3 (Threshold Odor No.)	1.5 (Threshold Odor No.)
Sulfate	250	125
Zinc	5	2.5

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. table 2, Register, October, 1990, No. 418, eff. 11-1-90; am. Table 2, Register, March, 1994, No. 459, eff. 4-1-94.

NR 140.14 Statistical procedures. (1) If a preventive action limit or an enforcement standard for a substance listed in

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Table 1 or 2, an alternative concentration limit issued in accordance with s. NR 140.28 or a preventive action limit for an indicator parameter established according to s. NR 140.20 (2) is attained or exceeded at a point of standards application:

(a) The owner or operator of the facility, practice or activity at which a standard is attained or exceeded shall notify the appropriate regulatory agency that a standard has been attained or exceeded; and

(b) The regulatory agency shall require a response in accordance with the rules promulgated under s. 160.21, Stats. No response shall be required if it is demonstrated to the satisfaction of the appropriate regulatory agency that a scientifically valid determination cannot be made that the preventive action limit or enforcement standard for a substance in Table 1 or 2 has been attained or exceeded based on consideration of sampling procedures or laboratory precision and accuracy, at a significance level of 0.05.

(2) The regulatory agency shall use one or more valid statistical procedures to determine if a change in the concentration of a substance has occurred. A significance level of 0.05 shall be used for all tests.

(3) In addition to sub. (2), the following applies when a preventive action limit or enforcement standard is equal to or less than the limit of quantitation:

(a) If a substance is not detected in a sample, the regulatory agency may not consider the preventive action limit or enforcement standard to have been attained or exceeded.

(b) If the preventive action limit or enforcement standard is less than the limit of detection, and the concentration of a substance is reported between the limit of detection and the limit of quantitation, the regulatory agency shall consider the preventive action limit or enforcement standard to be attained or exceeded only if:

1. The substance has been analytically confirmed to be present in the same sample using an equivalently sensitive analytical method or the same analytical method, and

2. The substance has been statistically confirmed to be present above the preventive action limit or enforcement standard, determined by an appropriate statistical test with sufficient samples at a significance level of 0.05.

(c) If the preventive action limit or enforcement standard is between the limit of detection and the limit of quantitation, the regulatory agency shall consider the preventive action limit or enforcement standard to be attained or exceeded if the concentration of a substance is reported at or above the limit of quantitation.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. (1) (intro.) and (b), r. and recr. (2), Register, October, 1988, No. 394, eff. 11-1-88; am. (1) (b), (2) and (3) (b), Register, September, 1990, No. 417, eff. 10-1-90; am. (1) (b), Register, March, 1994, No. 459, eff. 4-1-94; r. and recr. (3) (intro.), (a), (b), renum. (3) (c) to be 140.16 (3) and am., Register, August, 1995, No. 476, eff. 9-1-95.

NR 140.16 Monitoring and laboratory data requirements. (1) (a) All groundwater quality samples collected to determine compliance with ch. 160, Stats., shall comply with this section except as noted.

(b) *Groundwater sampling requirements.* All groundwater quality samples shall be collected and handled in accordance with procedures specified by the applicable regulatory agency or, where no sampling procedures are specified by that agency, in accordance with the sampling procedures referenced in par. (c). The sampling procedures specified by a regulatory agency may include requirements for field filtration.

(c) *Department groundwater sampling procedures.* 1. If sampling procedures are not specified by the applicable regulatory agency pursuant to par. (b), all groundwater quality samples shall be collected and handled in accordance with the sampling procedures contained in the following publications:

a. *Groundwater Sampling Desk Reference.* Wisconsin Department of Natural Resources, PUBL-DG-037-96, September, 1996.

b. *Groundwater Sampling Field Manual.* Wisconsin Department of Natural Resources, PUBL-DG-038-96, September, 1996.

Note: Copies of these publications may be purchased from:

Wisconsin Department of Administration
Document Sales Unit
202 South Thornton Avenue
P.O. Box 7840
Madison, WI 53707-7840

These publications are available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

2. Where no procedure for collecting a particular groundwater quality sample is specified by the appropriate regulatory agency or in the publications referenced in subd. 1, other published scientifically valid groundwater sampling procedures may be used.

(d) *Laboratory requirements.* All groundwater quality samples, except samples collected for total coliform bacteria analysis and field analyses for pH, specific conductance and temperature, shall be analyzed in accordance with provisions of ch. NR 149 by a laboratory certified or registered under ch. NR 149. Samples for total coliform bacteria analysis shall be analyzed by the state laboratory of hygiene or at a laboratory approved or certified by the department of agriculture, trade and consumer protection.

Note: Refer to s. NR 149.11 for sample preservation procedures and holding times.

(e) *Data submittal.* The results of the analysis of groundwater quality samples shall be submitted to the department and any applicable regulatory agency. Except as provided in s. NR 205.07 (3) (c) for wastewater permittees, this section does not require the submission of groundwater monitoring data which is collected voluntarily and is not required to be collected to determine compliance with this chapter or another rule or statute.

(2) The laboratory shall select the analytical methodology which:

(a) Is specified in rules or approved by the regulatory agency, and

(b) Is appropriate for the concentration of the sample, and

(c) Is one of the following:

1. Has a limit of detection and limit of quantitation below the preventive action limit, or

2. Produces the lowest available limit of detection and limit of quantitation if the limit of detection and limit of quantitation are above the preventive action limit.

(3) If the owner or operator of a facility, practice or activity believes that a sample result does not represent groundwater quality in the vicinity of the facility, practice or activity, the owner or operator shall resample the appropriate well or wells to obtain a representative sample at the earliest possible time. All sample results shall be submitted to the department and the appropriate regulatory agency with an explanation of why the owner or operator believes that all or some of the results are invalid.

(4) The department may reject groundwater quality data that does not meet the requirements of the approved or designated analytical methods.

(5) The owner or operator of the facility, practice or activity shall report the limit of detection and the limit of quantitation with the sample results. If a substance is detected below the limit of quantitation, the owner or operator shall report the detected value with the appropriate qualifier to the regulatory agency.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. (1), Register, September, 1990, No. 417, eff. 10-1-90; am. (1), r. and recr. (2), Register, March, 1994, No. 459, eff. 4-1-94; (5) renum. from NR 140.14 (3) (c), cr. (4), Register, August, 1995, No. 476, eff. 9-1-95; r. and recr. (1), Register, December, 1998, No. 516, eff. 1-1-99.

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Subchapter III — Evaluation and Response Procedures

NR 140.20 Indicator parameter groundwater standards. (1) **ESTABLISHING BACKGROUND WATER QUALITY.** Background water quality at a facility, practice or activity at which monitoring is required shall be established by sampling one or more monitoring points at locations and depths sufficient to yield groundwater samples that are representative of background water quality at or near the facility, practice or activity. Background water quality shall be determined for indicator parameters specified by the department. Background water quality for indicator parameters shall be established by averaging a minimum of 8 sample results from each well. The department may exclude any sample result which is nonrepresentative of background water quality. In making the calculations required in this section, the department may use as many representative sample points as are available.

(2) **ESTABLISHING PREVENTIVE ACTION LIMITS FOR INDICATOR PARAMETERS.** For each indicator parameter for which groundwater monitoring is required by the department, the preventive action limit shall be established based upon a change of water quality with respect to background water quality according to the methodology specified in pars. (a) to (c) and in Table 3.

(a) For field pH, the preventive action limit shall be one pH unit above or below the pH of the background water quality.

(b) For field temperature, the preventive action limit shall be 3 standard deviations or 10°F (5.6°C), whichever is greater, above or below the temperature of the background water quality.

(c) For all other indicator parameters, the preventive action limit shall be the background water quality for that parameter plus 3 standard deviations or the background water quality plus the increase of that parameter listed in Table 3, whichever is greater.

Note: The standard deviation for a group of samples is equal to the square root of the value of the sum of the squares of the difference between each sample in the sample group and the mean for that sample group divided by the number of samples in the sample group where the sample group has 30 or more samples and by one less than the number of samples in the sample group where the sample group has less than 30 samples.

Table 3
Methodology for Establishing Preventive Action Limit for Indicator Parameters

Parameter	Minimum Increase (mg/l)
Alkalinity	100
Biochemical oxygen demand (BOD ₅)	25
Calcium	25
Chemical oxygen demand (COD)	25
Magnesium	25
Nitrogen series	
Ammonia nitrogen	2
Organic nitrogen	2
Total nitrogen	5
Potassium	5
Sodium	10
Field specific conductance	200 micromhos/cm
Total dissolved solids (TDS)	200
Total hardness	100
Total organic carbon (TOC)	1
Total organic halogen (TOX)	0.25

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. table 3, Register, October, 1990, No. 418, eff. 11-1-90; am. Table 3, Register, December, 1998, No. 516, eff. 1-1-99.

NR 140.22 Point of standards application for design and compliance. (1) **DESIGN.** Facilities, practices or activities regulated by the department, including remedial actions, shall be

designed to minimize the level of substances in groundwater and to comply with the preventive action limits to the extent technically and economically feasible at all the following locations:

- (a) Any point of present groundwater use.
- (b) Any point beyond the boundary of the property on which the facility, practice or activity is located.
- (c) Any point within the property boundaries beyond the 3-dimensional design management zone if one is established by the department at each facility, practice or activity under sub. (3).
- (d) Every point at which groundwater is monitored to determine if a preventive action limit or enforcement standard has been attained or exceeded for sites identified under s. NR 140.22 (2) (c).

(2) **COMPLIANCE.** (a) The point of standards application to determine if a preventive action limit has been attained or exceeded is any point at which groundwater is monitored.

(b) The point of standards application to determine whether an enforcement standard has been attained or exceeded shall be the following locations:

1. Any point of present groundwater use;
2. Any point beyond the boundary of the property on which the facility, practice or activity is located;
3. Any point within the property boundaries beyond the 3 dimensional design management zone if one is established by the department at each facility, practice or activity under sub. (3).

Note: The boundary beyond which the enforcement standards apply is the closer of the property boundary or the design management zone boundary to the waste boundary for the facility, practice or activity.

(c) For discharges, releases, sites or facilities regulated under s. 292.11, 291.29 or 291.37, Stats., or s. NR 600.07, for which a design management zone has not been established in sub. (3), Table 4, the point of standards application shall be every point at which groundwater is monitored to determine if a preventive action limit or enforcement standard has been attained or exceeded.

(3) **DESIGN MANAGEMENT ZONE.** (a) The design management zone for facilities, practices or activities subject to regulation by the department shall be an area enclosed by vertical boundaries which extend from the land surface downward through all saturated geological formations. The design management zone shall extend horizontally beyond the waste boundary to the distance indicated in Table 4 for the specific type of facility, practice or activity. The waste boundary shall be the outermost limit at which waste from a facility, practice or activity has been stored, applied or disposed of, or permitted or approved for storage, application or disposal. For hazardous waste facilities regulated under ch. 291, Stats., the waste boundary shall include the horizontal space taken up by any liner, dike or other barrier to contain waste.

(b) In issuing or reissuing a permit, license or approval, the department may consider an expansion or reduction of the design management zone at a regulated or proposed facility, practice or activity by a horizontal distance not to exceed 50% of the distance listed in Table 4.

(c) The department shall consider the following factors in determining whether to expand or reduce the design management zone:

1. Nature, thickness and permeability of unconsolidated materials, including topography;
2. Nature and permeability of bedrock;
3. Groundwater depth, flow direction and velocity;
4. Waste volume, waste type and characteristics, including waste loading;
5. Contaminant mobility;
6. Distances to property boundary and surface waters;
7. Engineering design of the facility, practice or activity;
8. Life span of the facility, practice or activity;
9. Present and anticipated uses of land and groundwater; and

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

10. Potential abatement options if an enforcement standard is exceeded.

(d) The design management zone may not be expanded or reduced unless it has been demonstrated to the satisfaction of the department that the preventive action limits and enforcement standards will be met at the adjusted design management zone. The design management zone may not be expanded unless it has been demonstrated to the satisfaction of the department that the preventive action limits and enforcement standards cannot be met at the design management zone specified in Table 4.

Table 4

Type of Facility, Practice or Activity	Horizontal Distances for the Design Management Zone
Land disposal systems regulated under ch. 283, Stats.	250 feet
Wastewater and sludge storage or treatment lagoons regulated under ch. 281 or 283, Stats.	100 feet
Solid waste disposal facilities regulated under ch. 289, Stats., which have feasibility reports approved after October 1, 1985.	150 feet
All other solid waste disposal facilities regulated under ch. 289, Stats.	300 feet
Hazardous waste disposal facilities, waste piles, landfills and surface impoundments subject to regulation under s. NR 635.16	300 feet
Hazardous waste disposal facilities, waste piles, landfills and surface impoundments subject to regulation under ss. NR 635.05 to 635.15.	0 feet

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. (1) (b), Register, October, 1988, No. 394, eff. 11-1-88; am. (4) and table 4, Register, January, 1992, No. 433, eff. 2-1-92; am. (1), cr. (1) (d), renum. (2) to (5) to be (2) (a), (b), (c) and (3) and am. (2) (b) 3., Register, March, 1994, No. 459, eff. 4-1-94.

NR 140.24 Responses when a preventive action limit is attained or exceeded. (1) **NOTIFICATION AND ASSESSMENT.** If the concentration of a substance, including indicator parameters, in groundwater attains or exceeds a preventive action limit at a point of standards application as described in s. NR 140.22 (2):

(a) The owner or operator of the facility, practice or activity shall notify the department in writing when monitoring data is submitted that a preventive action limit has been attained or exceeded in accordance with any deadlines in applicable statutes, rules, permits or plan approvals. Where no deadlines are imposed, the owner or operator shall notify the department as soon as practical after the results are received. When the results of any private well sampling attain or exceed a preventive action limit, the owner or operator of the facility, practice or activity shall notify the department within 10 days after the results are received. The notification shall provide a preliminary analysis of the cause and significance of the concentration.

Note: Section 292.11 (2) (a), Stats., requires that the department be notified immediately of hazardous substance discharges.

Note: See s. NR 140.27.

(b) Upon receipt of the notice under par. (a), the department shall evaluate the information and, if further information is required to make the assessment under par. (c), direct the owner or operator to prepare and submit a report by a specified deadline. The report shall assess the cause and significance of the increased concentration based on a consideration of the factors identified in par. (c) and shall propose a response to meet the objectives of sub. (2).

(c) The department shall assess the cause and significance of the concentration of the substance in determining the appropriate response to meet the objectives of sub. (2). In addition to all other relevant information, the department shall consider the information submitted under par. (b) and the following factors where applicable:

1. Background water quality. a. The department shall compare background water quality data and monitoring data from wells downgradient of the facility, practice or activity to determine if downgradient water quality is adversely affected. If the background water quality at a facility, practice or activity is not known or is inadequately defined, the department may require additional sampling of existing wells, or installation and sampling of additional wells, or both.

b. Except for substances which are carcinogenic, teratogenic or mutagenic in humans, before requiring a response at a site where the background concentration of a substance is determined to be equal to or greater than the preventive action limit, the department shall determine that the proposed remedial action will protect or substantially improve groundwater quality notwithstanding the background concentrations of naturally occurring substances.

2. Reliability of sampling data. As part of its review of the quality of the sampling data, the department shall evaluate the sampling procedures, precision and accuracy of the analytical test, size of the data set, and the quality control and quality assurance procedures used. If there is insufficient information to evaluate the reliability of the sampling data, the department may require additional samples or other changes in the monitoring program at the facility, practice or activity.

3. Public health, welfare and environmental effects of the substance. The department shall consider the public health, welfare and environmental effects of the substance, including but not limited to its mobility in the subsurface, environmental fate, the risks considered when the standard was adopted and whether it is carcinogenic, mutagenic, teratogenic or has interactive effects with other substances.

4. Probability that a preventive action limit or an enforcement standard may be attained or exceeded outside the design management zone. In evaluating the probability that a preventive action limit or an enforcement standard may be attained or exceeded outside the design management zone, the department shall consider, at a minimum, geologic conditions, groundwater flow rate and direction, contaminant mobility in the subsurface and environmental fate.

5. Performance of the facility, practice or activity. The department shall consider whether the facility, practice or activity is performing as designed in accordance with the design requirements in s. NR 140.22 (1). The department shall consider the type, age and size of the facility, practice or activity; the type of design, if applicable; the operational history; and other factors related to performance of the facility, practice or activity as appropriate.

6. Location of the monitoring point. The department shall consider the location of the monitoring point in relation to the facility, practice or activity and the design management zone in assessing the appropriate response.

7. Other known or suspected sources of the substance in the area. If other known or suspected sources are present in the vicinity of a facility, practice or activity of concern, the department shall evaluate the probability of contributions from other sources of the substance. The department shall consider, at a minimum, the number, size, type and age of nearby sources; the groundwater flow patterns; and the substances involved.

8. Hydrogeologic conditions. The department shall consider the geologic and groundwater conditions, including but not limited to the nature, thickness and permeability of the unconsolidated materials; the nature and permeability of bedrock; the depth to the water table; groundwater flow gradients, both vertical and

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

horizontal; the position of the facility, practice or activity within the groundwater flow system; and the present and potential groundwater use in the vicinity of the facility, practice or activity at which an exceedance occurs. If there is insufficient hydrogeologic information, the department may require additional information.

9. Extent of groundwater contamination. The department shall consider the current and anticipated future extent of groundwater contamination in 3 dimensions. If water supplies are affected or threatened, the department shall evaluate the existing effects and potential risks of the substance on the potable water supplies. If the extent of contamination is not known, the department may require further documentation of the extent of contamination.

10. Alternate responses. The department shall evaluate alternate responses, including consideration of the technical and economic feasibility of alternate responses from Table 5 or 6 or both, the practicality of stopping the further release of the substance and the risks and benefits of continued operation of the facility, practice or activity and the ability of a response to meet other applicable environmental protection laws.

(2) RESPONSE OBJECTIVES. Based on its evaluation of the report required under sub. (1), and the assessment criteria of sub. (1) (c), the department shall specify the responses to be implemented by the owner or operator of the facility, practice or activity designed to the extent technically and economically feasible to prevent any new releases of the substance from traveling beyond the design management zone or other applicable points of standards application described in s. NR 140.22 and restore contaminated groundwater within a reasonable period of time, considering the criteria specified in s. NR 722.07. Both the source control and the groundwater restoration components of the response shall be designed and implemented to:

(a) Minimize the concentration of the substance in groundwater at the point of standards application where technically and economically feasible;

(b) Regain and maintain compliance with the preventive action limit. If the department determines that compliance with the preventive action limit is either not technically or economically feasible, the owner or operator shall achieve compliance with the lowest possible concentration which is technically and economically feasible; and

(c) Ensure that the enforcement standard is not attained or exceeded at the point of standards application.

(3) RANGE OF RESPONSES FOR INDICATOR PARAMETERS. Except as otherwise provided in this subsection, the range of responses which the department may take or may require if a preventive action limit for an indicator parameter identified in Table 3 has been attained or exceeded, is one or more of the responses in items 1 to 4 in Table 5. The range of responses is one or more of the responses in items 1 to 6 of Table 5 in the event the department determines that:

(a) There is a threat to public health or welfare as a result of a preventive action limit for an indicator parameter being attained or exceeded; or

(b) The results demonstrate a significant design flaw or failure of the facility to contain substances, such that the facility can be expected to emit one or more of the substances on Table 1 or 2 in excess of a preventive action limit at a point of standards application.

(4) RANGE OF RESPONSES FOR SUBSTANCES OF PUBLIC HEALTH OR WELFARE CONCERN. The range of responses which the department may take or may require the owner or operator of a facility, practice or activity to take if a preventive action limit for a substance of health or welfare concern has been attained or exceeded are listed in Table 5. More than one response may be taken or required by the department.

Table 5

Range of Responses for Exceedances of a Preventive Action Limit for Indicator Parameters and Substances of Health or Welfare Concern

1. No action pursuant to s. NR 140.24 (5) and consistent with s.160.23, Stats.
2. Require the installation and sampling of groundwater monitoring wells.
3. Require a change in the monitoring program, including increased monitoring.
4. Require an investigation of the extent of groundwater contamination.
5. Require a revision of the operational procedures at the facility, practice or activity.
6. Require a change in the design or construction of the facility, practice or activity.
7. Require an alternate method of waste treatment or disposal.
8. Require prohibition or closure and abandonment of a facility, practice or activity in accordance with sub. (6).
9. Require remedial action to renovate or restore groundwater quality.
10. Require remedial action to prevent or minimize the further discharge or release of the substance to groundwater.
11. Revise rules or criteria on facility design, location or management practices.
12. Require the collection and evaluation of data to determine whether natural attenuation can be effective to restore groundwater quality within a reasonable period of time, considering applicable criteria specified in ss. NR 140.24, 722.07 and 722.09 or 722.11, and require monitoring to determine whether or not natural attenuation is occurring in compliance with the response objectives in s. NR 140.24 (2).

(5) NO ACTION RESPONSE CRITERIA. For facilities, practices and activities with a design management zone specified in s. NR 140.22 (3) Table 4, the department may determine that no response is necessary and that an exemption under s. NR 140.28 is not required when either of the following conditions is met:

(a) The concentration of a substance within a design management zone is detected above the preventive action limit, the enforcement standard has not been attained or exceeded within the design management zone, and the department determines that there is no indication that the preventive action limit will be attained or exceeded at any point outside the design management zone, or

(b) The background concentration of a substance is greater than the preventive action limit, the anticipated or detected incremental increase in the concentration of a substance which results from a specific facility, practice or activity is not greater than the preventive action limit, and the anticipated or detected concentration is not greater than the enforcement standard either within or outside of the design management zone.

(6) PROHIBITION AND CLOSURE CRITERIA. The department may not impose a prohibition on a practice or activity or require closure of a facility which produces the substance unless the department:

(a) Bases its decision upon reliable test data;

(b) Determines, to a reasonable certainty, by the greater weight of the credible evidence, that no other remedial action would prevent the violation of the enforcement standard at the point of standards application;

(c) Establishes the basis for the boundary and duration of the prohibition; and

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

(d) Ensures that any prohibition imposed shall be reasonably related in time and scope to maintaining compliance with the enforcement standard at the point of standards application.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. (5) (intro.) and (6) (intro.), Register, October, 1988, No. 394, eff. 11-1-88; am. (1) (intro.), (a), (b), (c) (intro.), 5, and 10., (2) (intro.), and (5) (intro.), renum. (7) to be NR 104.02 (4), Register, January, 1992, No. 433, eff. 2-1-92; am. (1) (intro.), (c) (intro.), (3) (intro.) and Table 5, Register, March, 1994, No. 459, eff. 4-1-94; am. (1) (a), (5) (intro.), Register, August, 1995, No. 476, eff. 9-1-95; am. (2) (intro.), (4) and Table 5, Register, October, 1996, No. 490, eff. 11-1-96; am. (1) (a), Register, December, 1998, No. 516, eff. 1-1-99.

NR 140.26 Responses when an enforcement standard is attained or exceeded. (1) NOTIFICATION AND ASSESSMENT. If the concentration of a substance in groundwater attains or exceeds an enforcement standard at a point of standards application as described in s. NR 140.22 (2):

(a) The owner or operator of the facility, practice or activity shall notify the department in writing when monitoring data is submitted that an enforcement standard has been attained or exceeded in accordance with any deadlines in applicable statutes, rules, permits or plan approvals. Where no deadlines are imposed, the owner or operator shall notify the department as soon as practical after the results are received. When the results of any private well sampling attain or exceed an enforcement standard or preventive action limit, the owner or operator of the facility, practice or activity shall notify the department within 10 days after the results are received. The notification shall provide a preliminary analysis of the cause and significance of the concentration.

Note: Section 292.11 (2) (a), Stats., requires that the department be notified immediately of hazardous substance discharges.

Note: See s. NR 140.27.

(b) Upon receipt of the notice under par. (a), the department shall evaluate the information and, if further information is required to make the assessment under par. (c), direct the owner or operator to prepare and submit a report by a specified deadline. The report shall assess the cause and significance of the increased concentration based on a consideration of the factors identified in s. NR 140.24 (1) (c) and shall propose a response to achieve compliance with the enforcement standard at the point of standards application and to comply with sub. (4).

(c) The department shall assess the cause and significance of the concentration of the substance in determining the appropriate response measures to achieve compliance with the enforcement standard at the point of standards application and to comply with sub. (4). In addition to all other relevant information, the department shall consider the information submitted under sub. (1) and the factors listed in s. NR 140.24 (1) (c), where applicable.

(2) REGULATORY RESPONSES. (a) If a facility, activity or practice is regulated under subch. IV of ch. 283, Stats., ch. 289 or 291, Stats., the department shall require responses as necessary, based on the evaluation of the increased concentration as outlined in sub. (1), to prevent any new releases of the substance from traveling beyond the design management zone or other applicable point of standards application described in s. NR 140.22 and restore contaminated groundwater within a reasonable period of time, considering the criteria specified in s. NR 722.07. Both the source control and the groundwater restoration components of the response shall be designed to achieve compliance with the enforcement standard at the point of standards application and to achieve compliance with the preventive action limit at the point of standards application unless compliance with the preventive action limit is not technically and economically feasible. The range of responses which the department may take or may require the owner or operator of a facility, practice or activity to take if an enforcement standard for a substance of public health or welfare concern has been attained or exceeded at a point of standards application is listed in Table 6. More than one response listed in Table 6 may be required by the department. In addition, the department may take or may require the owner or operator of a facility,

practice or activity to take one or more responses from Table 5, except response number one.

Table 6

Range of Responses for Exceedance of Enforcement Standards for Substances of Health or Welfare Concern

1. Require a revision of the operational procedures at a facility, practice or activity.
2. Require a change in the design or construction of the facility, practice or activity.
3. Require an alternate method of waste treatment or disposal.
4. Require prohibition or closure and abandonment of a facility, practice or activity.
5. Require remedial action to renovate or restore groundwater quality.
6. Require remedial action to prevent or minimize the further release of the substance to groundwater.
7. Revise rules or criteria on facility design, location or management practices.
8. Require the collection and evaluation of data to determine whether natural attenuation can be effective to restore groundwater quality within a reasonable period of time, considering applicable criteria specified in ss. NR 140.24, 722.07 and 722.09 or 722.11, and require monitoring to determine whether or not natural attenuation is occurring in compliance with the requirements of s. NR 140.26 (2) (a).

(b) If an activity or practice is not subject to regulation under subch. IV of ch. 283, Stats., ch. 289 or 291, Stats., and if the concentration of a substance in groundwater attains or exceeds an enforcement standard at a point of standards application, the department shall take the following responses unless it can be shown to the department that, to a reasonable certainty, by the greater weight of the credible evidence, an alternative response will achieve compliance with the enforcement standard at the point of standards application:

1. Prohibit the activity or practice which uses or produces the substance; and
2. Require remedial actions with respect to the specific site in accordance with this chapter.

(3) RESPONSES FOR NITRATE AND SUBSTANCES OF PUBLIC WELFARE CONCERN. If nitrates or any substance of welfare concern only attains or exceeds an enforcement standard, the department is not required to impose a prohibition or close a facility if it determines that:

- (a) The enforcement standard was attained or exceeded, in whole or in part, because of high background concentrations of the substance; and
- (b) The additional concentration does not represent a public welfare concern.

(4) COMPLIANCE WITH PREVENTIVE ACTION LIMITS. When compliance with the enforcement standard is achieved at the point of standards application, s. NR 140.24 applies.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. (1) (intro.), (a), (b), (2), r. (6), Register, January, 1992, No. 433, eff. 2-1-92; am. (1) (intro.) and Table 6, renum. (2) to (5) to be (2) (a), (b), (3) and (4), Register, March, 1994, No. 459, eff. 4-1-94; am. (1) (a), Register, August, 1995, No. 476, eff. 9-1-95; correction in (1) (b) and (c) made under s. 13.93 (2m) (b) 7., Stats., Register, August, 1995, No. 476; am. (2) (a) and Table 6, Register, October, 1996, No. 490, eff. 11-1-96; am. (1) (a), Register, December, 1998, No. 516, eff. 1-1-99.

NR 140.27 Responses when an enforcement standard is attained or exceeded at a location other than a point of standards application. If the concentration of a substance in groundwater attains or exceeds an enforcement standard

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

at a location other than a point of standards application for an enforcement standard, s. NR 140.24 shall apply.

History: Cr. Register, October, 1988, No. 394, eff. 11-1-88.

NR 140.28 Exemptions. (1) APPLICABILITY. (a) The department may not approve a proposed facility, practice or activity at a location where a preventive action limit or enforcement standard adopted under s. NR 140.10 or 140.12 has been attained or exceeded unless an exemption has been granted under this section.

(b) For an existing facility, practice or activity, a response is required under s. NR 140.24 (2) or 140.26 (2) when a preventive action limit or an enforcement standard has been attained or exceeded at a point of standards application unless an exemption has been granted under this section or the criteria of s. NR 140.24 (5) (a) or (b) are met.

(c) For an existing facility, practice or activity that has taken or is taking a response under s. NR 140.24 (2) or 140.26 (2), a continued response is required unless a substance no longer attains or exceeds a preventive action limit or an exemption has been granted under this section.

(d) If a substance or remedial material is to be infiltrated or injected into groundwater at a concentration which attains or exceeds a preventive action limit, or at any concentration for a substance or remedial material for which a groundwater quality standard has not been established under this chapter, a temporary exemption is required under sub. (5).

(2) CRITERIA FOR GRANTING EXEMPTIONS WHERE THE BACKGROUND CONCENTRATION IS BELOW THE PREVENTIVE ACTION LIMIT.

(a) The department may grant an exemption under this section to a facility, practice or activity which is regulated by the department in an area where the background concentration of nitrate or a substance of public welfare concern is below the preventive action limit if the facility, practice or activity is designed and implemented to achieve the lowest possible concentration for that substance which is technically and economically feasible and the existing or anticipated increase in the concentration of that substance does not present a threat to public health or welfare.

(b) The department may grant an exemption under this section to a facility, practice or activity which is regulated by the department in an area where the background concentration of a substance of public health concern, other than nitrate, is below the preventive action limit for that substance if all of the following occur:

1. The measured or anticipated increase in the concentration of the substance will be minimized to the extent technically and economically feasible.
2. Compliance with the preventive action limit is either not technically or economically feasible.
3. The enforcement standard for that substance will not be attained or exceeded at the point of standards application.
4. Any existing or projected increase in the concentration of the substance above the background concentration does not present a threat to public health or welfare.

Note: An exemption may be considered under this subsection even if monitoring data indicates no detectable background concentration of the substance.

(3) CRITERIA FOR GRANTING EXEMPTIONS WHERE THE BACKGROUND CONCENTRATION IS ABOVE A PREVENTIVE ACTION LIMIT. (a) The department may grant an exemption under this section to a facility, practice or activity which is regulated by the department in an area where the background concentration of nitrate or a substance of public welfare concern attains or exceeds the preventive action limit if the facility, practice or activity is designed to achieve the lowest possible concentration for that substance which is technically and economically feasible and the existing or anticipated increase in the concentration of the substance does not present a threat to public health or welfare.

(b) The department may grant an exemption under this section to a facility, practice or activity which is regulated by the department in an area where the background concentration of a substance of public health concern, other than nitrate, attains or exceeds a preventive action limit for that substance:

1. If the facility, practice or activity has not caused and will not cause the further release of that substance into the environment; or

2. If the background concentration of the substance does not exceed the enforcement standard for that substance, the facility, practice or activity has not caused and will not cause the concentration of the substance to exceed the enforcement standard for that substance at a point of standards application and the facility, practice or activity is designed to achieve the lowest possible concentration of that substance which is technically and economically feasible.

(4) CRITERIA FOR GRANTING EXEMPTIONS WHERE THE BACKGROUND CONCENTRATION IS ABOVE AN ENFORCEMENT STANDARD.

(a) The department may grant an exemption under this section to a facility, practice or activity which is regulated by the department in an area where the background concentration of nitrate or a substance of public welfare concern attains or exceeds an enforcement standard if the facility, practice or activity is designed to achieve the lowest possible concentration for that substance which is technically and economically feasible and the existing or anticipated increase in the concentration of the substance does not present a threat to public health or welfare.

(b) The department may grant an exemption under this section to a facility, practice or activity which is regulated by the department in an area where the background concentration of a substance of public health concern, other than nitrate, attains or exceeds the enforcement standard for that substance if:

1. The facility has not caused and will not cause the further release of that substance into the environment; or

2. a. The facility is designed to achieve the lowest possible concentration of that substance which is technically and economically feasible; and

b. The existing or anticipated increase in the concentration of the substance has not caused or will not cause an increased threat to public health or welfare; and

c. The existing or anticipated incremental increase in the concentration of the substance by itself, has not exceeded or will not exceed the preventive action limit.

(c) The department shall take action under s. NR 140.26 if it determines that the increase in the concentration of the substance causes an increased threat to public health or welfare or it determines that the incremental increase in the concentration of the substance, by itself, exceeds the preventive action limit.

(5) CRITERIA FOR GRANTING A TEMPORARY EXEMPTION WHERE INFILTRATION OR INJECTION IS UTILIZED FOR A REMEDIAL ACTION.

(a) *General.* In lieu of an exemption granted in compliance with the criteria in subs. (2) to (4), the department may grant a temporary exemption if the criteria in this subsection are complied with. This exemption applies to the owner or operator of a facility, practice or activity that is undertaking a remedial action that: includes the infiltration or injection of contaminated groundwater or remedial material, has been approved by the department, and will comply with the applicable response objectives under s. NR 140.24 or 140.26 within a reasonable period of time. The owner or operator of the facility, practice or activity may submit a temporary exemption request to the department at the same time or after the department has approved the remedial action.

(b) *Exemption request.* The owner or operator of the facility, practice or activity shall submit a request for a temporary exemption to the department. As part of the request, the applicant shall indicate how the exemption prerequisites under par. (c) and appli-

*p-1Y

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

cable remedial design, operational and monitoring criteria under par. (d) will be met.

Note: For most remedial actions, a microcosm or treatability study, or other bench scale or pilot scale study will be required by the department prior to consideration of an exemption for the full-scale remedial action under this section. If a pilot scale study is deemed necessary before an exemption for a full-scale remedial action can be granted, a separate temporary exemption issued under this section is required before the pilot scale study can begin.

(c) *Exemption prerequisites.* As part of the temporary exemption request, the owner or operator shall demonstrate to the satisfaction of the department that all of the following requirements will be met:

1. The remedial action for restoring contaminated soil or groundwater, and any infiltrated or injected contaminated water and remedial material, shall achieve the applicable response objectives required by s. NR 140.24 (2) or 140.26 (2) within a reasonable period of time.

2. The type, concentration and volume of substances or remedial material to be infiltrated or injected shall be minimized to the extent that is necessary for restoration of the contaminated soil or groundwater and be approved by the department prior to use.

3. Any infiltration or injection of contaminated water or remedial material into soil or groundwater will not significantly increase the threat to public health or welfare.

4. No uncontaminated or contaminated water, substance or remedial material will be infiltrated or injected into an area where a floating non-aqueous phase liquid is present in the contaminated soil or groundwater.

5. There will be no expansion of soil or groundwater contamination, or migration of any infiltrated or injected contaminated water or remedial material, beyond the edges of previously contaminated areas, except that infiltration or injection into previously uncontaminated areas may be allowed if the department determines that expansion into adjacent, previously uncontaminated areas is necessary for the restoration of the contaminated soil or groundwater, and the requirements of subd. 1. will be met.

6. All necessary federal, state and local licenses, permits and other approvals are obtained and all applicable environmental protection requirements will be complied with.

Note: The issuance of a wastewater discharge permit by the department is required prior to the infiltration or injection of substances or remedial material into unsaturated soil or groundwater. A wastewater discharge permit establishes the effluent or injection limits for substances or remedial material which may be infiltrated or injected into unsaturated soil or groundwater. A temporary exemption granted under this subsection applies to substances or remedial material which may enter groundwater or may be detected at a point of standards applications; it does not apply to substances or remedial material infiltrated or injected into unsaturated soil.

(d) *Remedial action design, operation and monitoring criteria.* In addition to providing information on how the requirements under par. (c) will be met, the application shall specify the following information where applicable.

1. The remedial action design, operation and soil and groundwater monitoring procedures to insure compliance with the requirements under par. (c) and applicable criteria under this paragraph.

2. The level of pre-treatment for contaminated groundwater prior to reinfiltration or reinjection.

3. The types and concentrations of substances or remedial material being proposed for infiltration or injection.

4. The volume and rate of infiltration or injection of contaminated groundwater or remedial material.

5. The location where the contaminated groundwater or remedial material will be infiltrated or injected.

(e) *Granting an exemption.* The department may only grant a temporary exemption under this subsection at the same time or after the department has approved the remedial action. When the department grants an exemption under this subsection, it shall follow the exemption procedures included in sub. (6) and shall require the owner or operator of the facility, practice or activity to comply with the requirements and criteria in pars. (c) and (d). The temporary exemption shall also include:

1. The expiration date of the temporary exemption. The expiration date shall be selected to achieve the applicable response objectives required by s. NR 140.24 (2) or 140.26 (2) within a reasonable period of time, not to exceed 5 years from the effective date of the exemption. The temporary exemption may be reissued following a department review of information documenting the performance of the remedial action and a successful demonstration that reissuance of the exemption is necessary to achieve the response objectives required by s. NR 140.24 (2) or 140.26 (2), necessary relating to the temporary exemption.

(f) *Responses to exemption violations.* If the department determines that the conditions or requirements specified in the temporary exemption are not being met, the department may:

1. Require that the owner or operator of the facility, practice or activity revise the remedial action design, operation or monitoring procedures in accordance with par. (d). All revisions shall comply with the requirements established under pars. (c) and (e) and may require approval from the department prior to implementation.

2. Revoke the exemption and require implementation of an alternate remedial action to restore soil or groundwater quality.

(6) **EXEMPTION PROCEDURES.** If the department grants an exemption under this section for a substance or a remedial material, it shall specify:

(a) The substance or remedial material to which the exemption applies;

(b) The terms and conditions of the exemption, which may include an alternative concentration limit, under which the department may seek a response under s. NR 140.24 or 140.26 relating to the substance or remedial material; and

(c) Any other conditions relating to the exemption.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. (1) (a) and (b), (3) (a), (b) (intro.) and 2., (4) (a) and (b) 1. and (5) (b), Register, October, 1988, No. 394, eff. 11-1-88; am. (1) (b), Register, January, 1992, No. 433, eff. 2-1-92; correction in (4) (b) made under s. 13.93 (2m) (b) 1., Stats., Register, January, 1992, No. 433; am. (1) (b) and (5) (b), Register, March, 1994, No. 459, eff. 4-1-94; renum. (5) to be (6), cr. (5), Register, August, 1995, No. 476, eff. 9-1-95; cr. (1) (c), (d), am. (2) (intro.), (5) (a), (6) (intro.), (a) and (b), Register, December, 1998, No. 516, eff. 1-1-99; r. and recr. (2), Register, March, 2000, No. 531, eff. 4-1-00.

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Chapter NR 140

APPENDIX I TO TABLE 1 PUBLIC HEALTH GROUNDWATER QUALITY STANDARDS

Substance	CAS RN ¹	Common synonyms/Trade name ²
Acetone	67-64-1	<i>Propanone</i>
Alachlor	15972-60-8	<i>Lasso</i>
Aldicarb	116-06-3	<i>Temik</i>
Anthracene	120-12-7	Para-naphthalene
Asbestos	12001-29-5	
Bentazon	25057-89-0	<i>Basagran</i>
Benzene	71-43-2	
Benzo(b)fluoranthene	205-99-2	B(b)F,3,4-Benzofluoranthene
Benzo(a)pyrene	50-32-8	BaP, B(a)P
Boron	7440-42-8	
Bromodichloromethane	75-27-4	Dichlorobromomethane, BDCM
Bromoform	75-25-2	Tribromomethane
Bromomethane	74-83-9	Methyl bromide
Butylate	2008-41-5	
Carbaryl	63-25-2	<i>Sevin</i>
Carbofuran	1563-66-2	<i>Furadan</i>
Carbon disulfide	75-15-0	Carbon bisulfide
Carbon tetrachloride	56-23-5	Tetrachloromethane, Perchloroethane
Chloramben	133-90-4	
Chlordane	57-74-9	
Chloroethane	75-00-3	Ethyl chloride, Monochloroethane
Chloroform	67-66-3	Trichloromethane
Chloromethane	74-87-3	Methyl chloride
Chrysene	218-01-9	1,2-Benzphenanthrene
Cobalt	7440-48-4	
Cyanazine	21725-46-2	<i>Bladex</i> , 2-chloro-4-ethylamino-6-nitriloisopropylamino-s-triazine
Cyanide	57-12-5	
Dacthal	1861-32-1	DPCA, Chlorothal
Dibromochloromethane	124-48-1	Chlorodibromomethane, DBCM
1,2-Dibromo-3-chloropropane	96-12-8	DBCP, Dibromochloropropane
1,2-Dibromoethane	106-93-4	EDB, Ethylene dibromide, Dibromoethane
Dibutyl phthalate	84-74-2	DP, Di- <i>n</i> -butyl phthalate, <i>n</i> -Butyl phthalate
Dicamba	1918-00-9	<i>Banvel</i>
1,2-Dichlorobenzene	95-50-1	o-Dichlorobenzene, o-DCB
1,3-Dichlorobenzene	541-73-1	m-Dichlorobenzene, m-DCB
1,4-Dichlorobenzene	106-46-7	p-Dichlorobenzene, p-DCB
Dichlorodifluoromethane	75-71-8	<i>Freon 12</i>
1,1-Dichloroethane	75-34-3	Ethylidene chloride
1,2-Dichloroethane	107-06-2	1,2-DCA, Ethylene dichloride
1,1-Dichloroethylene	75-35-4	1,1-DCE, 1,1-Dichloroethene, Vinylidene chloride
1,2-Dichloroethylene (cis)	156-59-2	cis-Dichloroethylene, 1,2-Dichloroethene (cis)
1,2-Dichloroethylene (trans)	156-60-5	trans-1,2-Dichloroethylene
2,4-Dichlorophenoxyacetic acid	94-75-7	2,4-D
1,2-Dichloropropane	78-87-5	Propylene dichloride
1,3-Dichloropropene (cis/trans) ³		<i>Telone</i> , DCP, Dichloropropylene
Di(2-ethylhexyl) phthalate	117-81-7	DEHP, Bis(2-ethylhexyl) phthalate, 1,2-Benzenedicarboxylic acid, Bis(2-ethylhexyl)ester

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Substance	CAS RN ¹	Common synonyms/Trade name ²
Dimethoate	60-51-5	
2,4-Dinitrotoluene	121-14-2	2,4-DNT, 1-methyl-2,4-dinitrobenzene
2,6-Dinitrotoluene	606-20-2	2,6-DNT, 2-methyl-1,3-dinitrobenzene
Dinoseb	88-85-7	2-(1-methylpropyl)-4,6-dinitrophenol
Dioxin	1746-01-6	2,3,7,8-TCDD, 2,3,7,8-Tetrachlorodibenzo-p-dioxin
Endrin	72-20-8	
EPTC	759-94-4	<i>Eptam, Eradicane</i>
Ethylbenzene	100-41-4	Phenylethane, EB
Ethylene glycol	107-21-1	
Fluoranthene	206-44-0	Benzo(jk)fluorene
Fluorene	86-73-7	2,3-Benzidine, Diphenylenemethane
Fluoride	16984-48-8	
Fluorotrichloromethane	75-69-4	<i>Freon 11, Trichlorofluoromethane</i>
Formaldehyde	50-00-0	
Heptachlor	76-44-8	<i>Velsicol</i>
Heptachlor epoxide	1024-57-3	
Hexachlorobenzene	118-74-1	Perchlorobenzene, <i>Granox</i>
N-Hexane	110-54-3	Hexane, Skellysolve B
Hydrogen sulfide	7783-06-4	Dihydrogen sulfide
Lindane	58-89-9	
Mercury	7439-97-6	
Methanol	67-56-1	Methyl alcohol, Wood alcohol
Methoxychlor	72-43-5	
Methylene chloride	75-09-2	Dichloromethane, Methylene dichloride
Methyl ethyl ketone	78-93-3	MEK, 2-Butanone
Methyl isobutyl ketone	108-10-1	MIBK, 4-Methyl-2-pentanone, Isopropylacetone, <i>Hexone</i>
Methyl tert-butyl ether	1634-04-4	MTBE, 2-Methoxy-2-methyl-propane, tert-Butyl methyl ether
Metolachlor	51218-45-2	<i>Dual, Bicep, Milocep</i>
Metribuzin	21087-64-9	Sencor, Lexone
Monochlorobenzene	108-90-7	Chlorobenzene
Naphthalene	91-20-3	
N-Nitrosodiphenylamine	86-30-6	NDPA
Pentachlorophenol	87-86-5	PCP, Pentachlorohydroxybenzene
Phenol	108-95-2	
Picloram	1918-02-1	<i>Tordon, 4-amino-3,5,6-trichloropicolinic acid</i>
Polychlorinated biphenyls ⁴		PCBs
Prometon	1610-18-0	<i>Pramitol, Prometone</i>
Pyrene	129-00-0	Benzo(def)phenanthrene
Pyridine	110-86-1	Azabenzene
Simazine	122-34-9	<i>Princep, 2-chloro-4,6-diethylamino-s-triazine</i>
Styrene	100-42-5	Ethenylbenzene, Vinylbenzene
1,1,1,2-Tetrachlorethane	630-20-6	1,1,1,2-TCA
1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-TCA
Tetrachloroethylene	127-18-4	Perchloroethylene, PERC, Tetrachloroethene
Tetrahydrofuran	109-99-9	THF
Toluene	108-88-3	Methylbenzene
Toxaphene	8001-35-2	
1,2,4-Trichlorobenzene	120-82-1	
1,1,1-Trichloroethane	71-55-6	Methyl chloroform
1,1,2-Trichloroethane	79-00-5	1,1,2-TCA, Vinyl trichloride
Trichloroethylene	79-01-6	TCE, Chloroethene

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Substance	CAS RN ¹	Common synonyms/Trade name ²
2,4,5-Trichlorophenoxypropionic acid	93-72-1	2,4,5-TP, <i>Silvex</i>
1,2,3-Trichloropropane	96-18-4	1,2,3-TCP, Glycerol trichlorohydrin
Trifluralin	1582-09-8	<i>Treflan</i>
1,2,4-Trimethylbenzene	95-63-6	
1,3,5-Trimethylbenzene	108-67-8	
Vanadium	7440-62-2	
Vinyl chloride	75-01-4	VC, Chloroethene
Xylene ⁵		

¹Chemical Abstracts Service (CAS) registry numbers are unique numbers assigned to a chemical substance. The CAS registry numbers were published by the U.S. Environmental Protection Agency in 40 CFR Part 264, Appendix IV

²Common synonyms include those widely used in government regulations, scientific publications, commerce and the general public. A trade name, also known as the proprietary name, is the specific, registered name given by a manufacturer to a product. Trade names are listed in *italics*. Common synonyms and trade names should be cross-referenced with CAS registry number to ensure the correct substance is identified.

³This is a combined chemical substance which includes *cis* 1,3-Dichloropropene (CAS RN 10061-01-5) and *trans* 1,3-Dichloropropene (CAS RN 10061-02-6).

⁴Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals (same molecular composition, different molecular structure and formula), including constituents of Aroclor-1016 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5).

⁵Xylene (CAS RN 1330-20-7) refers to a mixture of three isomers, *meta*-xylene (CAS RN 108-38-3), *ortho*-xylene (CAS RN 95-47-6), and *para*-xylene (CAS RN 106-42-3)



Photo 2
NE Area of the Subject Property;
Methane Gas Probe GP-17 in the
Foreground; Looking NE

Photo 1
Southeast Area of the Subject
Property; Coppis Food Center
in the Distance; Looking SE

Photo 4
NW Area of The Portion of the
Subject Property bounded by a
Chain Link Fence; Looking NW
Towards The Rifken Group's Building

Photo 3
NE Area of the Subject Property
As Seen From the Closed Trux
Landfill to the North of the
Subject Property; Looking South

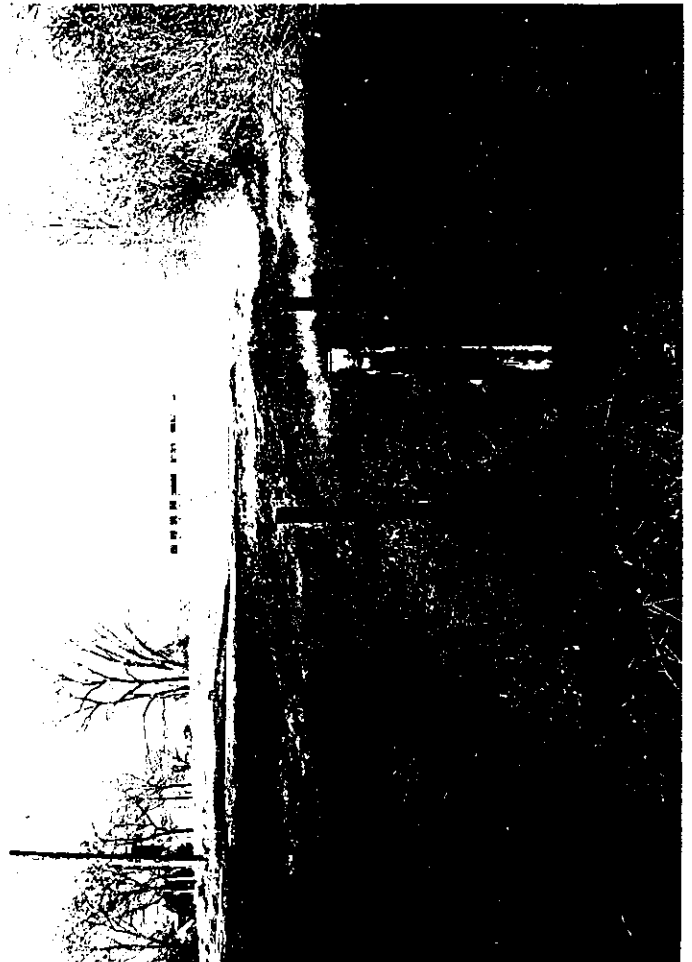


Photo 6
Vacant Land Along West Side of the
Subject Property As Seen From the
NW Corner of the Property;
Packers Ave. on Right; Looking SE

Photo 5
Subject Property As Seen From
the NW Corner of the Property;
Looking E-SE Towards Trees in NW
Area of Fenced-In Part of Property

Photo 8
Vacant Land at the Southern
End of the Subject Property;
Looking West From Near SW
Corner of the Property

Photo 7
Well TG-2 Along West Side of the
Subject Property; Access Road to the
Former Treatment Plant; Looking
North Towards NW Area of Property

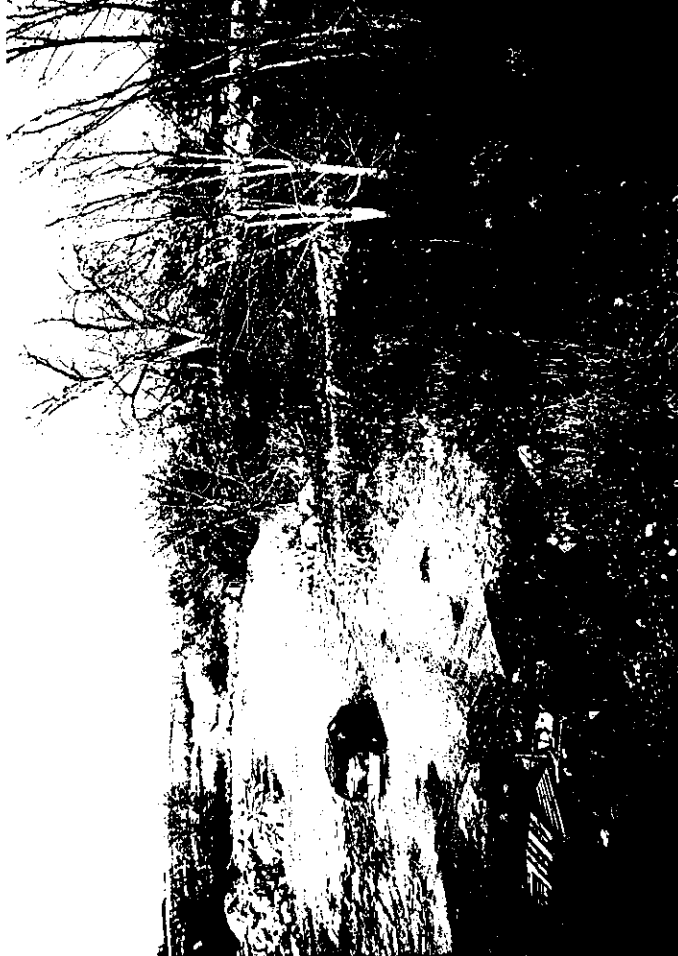


Photo 10
East End of Pile of Concrete Pieces
at the Property on Fill Material
That Was Brought to the Property;
Looking NE

Photo 9
Pile of Concrete Pieces in the
Central Area of the Subject
Property; Looking North

Photo 12
The Rifken Group Building at
1402 Pankratz Street North
of the NW Area of the Subject
Property; Looking NE

Photo 11
North End of Pile of Concrete Pieces
at the Property Near the Road that
Enters the West Side of the Former
Treatment Plant Area; Looking East

Photo 14
Part of the Bridges Golf Course
East of the NE Area of the
Subject Property, Looking SE.
Copp's & Shopko in the Distance

Photo 13
Southern End of the Inactive
Truax First Landfill; Looking SW
From North of the NE Corner of the
Subject Property

Photo 16
Packers Avenue West of the
NW Area of the Subject Property;
Looking West

Photo 15
Copp's Food Center and Parking
Lot East of the SE Area of the
Subject Property; Looking NE



Photo 18
NW End of the Former Sludge Beds
at the Subject Property;
Looking SE

Photo 17
Wells MW-5, MW-5A and MW-5B in
SW Area of the Subject Property,
Looking NW

Photo 20
Boat and Plastic Chair Which
Someone Has Disposed at the
Subject Property;
Looking SE

Photo 19
Pipe to the West of the NW
Corner of the Former Sludge
Beds at the Subject Property;
Looking North