



Long-Term Stewardship Plan

DuPage County Landfill/Blackwell
Forest Preserve Site
Warrenville, Illinois

June 19, 2020

Prepared for:

Forest Preserve District
DuPage County, Illinois

Prepared by:

Stantec Consulting Services Inc.
701 East 22nd Street
Lombard, Illinois 60148





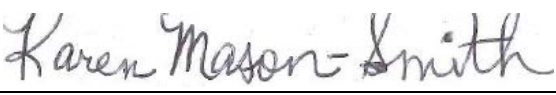
Prepared	Stantec Consulting Services Inc.	 <hr/> <i>(Signature)</i> David Powers, P.G. Project Coordinator <hr/> <i>(Name/Title)</i> June 19, 2020 <hr/> <i>(Date)</i>
Reviewed	Forest Preserve District of DuPage County	 <hr/> <i>(Signature)</i> Daniel L. Zinnen, P.E., L.S. Director of Resource Management and Development <hr/> <i>(Name/Title)</i> June 19, 2020 <hr/> <i>(Date)</i>
Approved	EPA Region 5 Approving Official	 <hr/> <i>(Signature)</i> Karen L. Mason-Smith Remedial Project Manager <hr/> <i>(Name/Title)</i> June 19, 2020 <hr/> <i>(Date)</i>



Table of Contents

ABBREVIATIONS	III
1.0 INTRODUCTION	1.1
1.1 PURPOSE.....	1.1
1.2 BACKGROUND ON INSTITUTIONAL CONTROLS	1.1
1.3 REPORT ORGANIZATION	1.2
2.0 SITE DESCRIPTION	2.1
2.1 SITE USE AND FEATURES	2.1
2.2 SELECTED REMEDY	2.2
2.3 REMEDIAL ACTION SUMMARY	2.3
2.4 DELETION FROM NPL.....	2.5
3.0 LONG-TERM STEWARDSHIP	3.1
3.1 INSTITUTIONAL CONTROLS.....	3.1
3.2 EFFECTIVE IMPLEMENTATION AND EVALUATION OF ACTIVITY AND USE LIMITATIONS.....	3.2
3.3 ENGINEERED REMEDIAL SYSTEMS.....	3.3
3.4 EFFECTIVE IMPLEMENTATION AND EVALUATION OF ENGINEERED REMEDIAL SYSTEMS.....	3.3
3.4.1 O&M Plan	3.4
3.4.2 LFG Sampling.....	3.4
3.4.3 Leachate Sampling.....	3.5
3.4.4 O&M Schedule	3.5
3.4.5 Vegetation Management	3.5
3.4.6 Long-Term Groundwater Monitoring	3.6
4.0 REPORTING	4.1
4.1 ANNUAL REPORTING	4.1
4.2 COMPLIANCE REPORTING	4.1
5.0 COMMUNICATION PLAN	5.1
6.0 COST ESTIMATE	6.1
6.1 ANNUAL OPERATING COSTS	6.1
6.2 ENSURING FUNDING AND OTHER RESOURCES ARE ADEQUATE AND SUSTAINABLE	6.1
7.0 REFERENCES	7.1



LONG-TERM STEWARDSHIP PLAN

LIST OF TABLES

Table 1 Inspection, Monitoring and Maintenance Schedule

LIST OF FIGURES

Figure 1 Site Location Map
Figure 2 Site Features Map
Figure 3 LCS and LFG System Layout Map
Figure 4 Upper Aquifer Well and Piezometer Locations
Figure 5 Bedrock Aquifer Well Locations

LIST OF APPENDICES

Appendix A Deed Restrictions and Restrictive Covenants
Appendix B Title Commitment
Appendix C Record of Decision



Abbreviations

AOC	Administrative Order by Consent
CERCLA	Comprehensive Environmental Response Compensation Liability Act
District	Forest Preserve District of DuPage County
DWEF	District-Wide Environmental Fund
EC	Environmental Covenant
EPA	Environmental Protection Agency
ERF	Environmental Responsibility Fund
IAC	Illinois Administrative Code
ICs	Institutional Controls
LCS	Leachate Collection System
LFG	Landfill Gas
LTS	Long-Term Stewardship
MCL	Maximum Contaminant Level
MNA	Monitored Natural Attenuation
MS/MSD	Matrix Spike/ Matrix Spike Duplicate
MWH	MWH Americas, Inc.
NPL	National Priorities List
O&M	Operations and Maintenance
QC	Quality Control
RA	Response Action
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
Site	DuPage County Landfill/Blackwell Forest Preserve Site
Stantec	Stantec Consulting Services
TNMOC	Total Non-Methane Organic Compounds



LONG-TERM STEWARDSHIP PLAN

UE	Unrestricted Exposure
UECA	Uniform Environmental Covenant Act
U.S. EPA	United States Environmental Protection Agency
UU	Unrestricted Use
VOCs	Volatile Organic Compounds



LONG-TERM STEWARDSHIP PLAN

Introduction

1.0 INTRODUCTION

This Long-Term Stewardship Plan (LTS Plan) presents a strategy for maintaining, monitoring, and reporting on the institutional controls (ICs) and remedial systems established for the DuPage County Landfill/Blackwell Forest Preserve Site in DuPage County, Illinois. The Forest Preserve District of DuPage County (District) owns and manages the Forest Preserve.

The DuPage County Landfill (Site) has undergone remedial action (RA) under Section 104 of Comprehensive Environmental Response Compensation Liability Act (CERCLA). The Site was added to the National Priorities List (NPL) in the Federal Register on February 21, 1990. Over the past 30 years, the District has performed response items and implemented the selected remedies for the Site. The United States Environmental Protection Agency (U.S. EPA) and Illinois EPA have determined that the remedial objectives for the Site have been met, and therefore it is eligible for deletion from the NPL.

ICs have been placed on the Site. The ICs prohibit any activity that interferes with, damages, or otherwise impairs the effectiveness of any response action (or component thereof) selected and/or undertaken by the U.S. EPA pursuant to CERCLA. Therefore, the engineered remedial systems installed as part of the selected remedy will be maintained for the Site. A copy of the ICs, in the form of deed restrictions/ restrictive covenants, are included in **Appendix A**.

1.1 PURPOSE

The purpose of this LTS Plan is to define the stewardship activities that are necessary to maintain compliance with the ICs and ensure the engineered remedial systems remain effective until such time when they are no longer needed.

1.2 BACKGROUND ON INSTITUTIONAL CONTROLS

As defined in U.S. EPA's Office of Solid Waste and Emergency Response and Office of Enforcement and Compliance Assurance Directive *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites*, the term ICs are "non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for exposure to contamination and/or protect the integrity of a response action. As response components, IC instruments generally are designed to achieve the precise substantive use restrictions articulated in the decision documents that are needed to help achieve the site's overall cleanup objectives. For purposes of this guidance, ICs are divided into four categories: proprietary controls, governmental controls, enforcement and permit tools with IC components, and informational devices (OSWER 9200.0-77, EPA-540-R-09-002, December 2012)."



LONG-TERM STEWARDSHIP PLAN

Introduction

1.3 REPORT ORGANIZATION

The following summarizes the organization of the LTS Plan:

- **Section 1 – Introduction:** This section introduces the purpose of the LTS Plan and report organization.
- **Section 2 – Site Description:** This section describes the Site and summarizes the remedial actions performed by the District pursuant to Section 104 of CERCLA.
- **Section 3 – Long-Term Stewardship:** This section describes how the District will manage the Site after it is delisted from the NPL
- **Section 4 – Reporting:** This section describes the reporting requirements to document compliance with the ICs.
- **Section 5 - Communication Plan:** This section describes the current contacts for the District and Agencies.
- **Section 6 – Costs:** This section describes the estimated annual costs for long-term stewardship and the sources that will ensure long-term funding and resources for the Site.
- **Section 5 – References:** This section provides references for reports cited throughout the LTS Plan.



LONG-TERM STEWARDSHIP PLAN

Site Description

2.0 SITE DESCRIPTION

The Site is an approximately 35-acre landfill located within the approximately 1,200-acre Blackwell Forest Preserve. The Blackwell Forest Preserve is approximately six miles southwest of downtown Wheaton, Illinois, near Warrenville, in DuPage County, Illinois. The Site is located in Section 26, Township 39 North, Range 9 East, DuPage County, Illinois. A Site Location Map is provided as **Figure 1**.

The District owns and manages the Forest Preserve. The Forest Preserve is bounded in part by Spring Brook, Winfield Road and Butterfield Road. The Forest Preserve is open space containing woodlands, grasslands, wetlands and lakes accessed year-round by the public for recreational uses such as hiking, camping, boating, fishing, and horseback riding. The landfill is located centrally in the preserve with more than 1,000 feet of District property surrounding the landfill in any direction. A Site Features Map is provided as **Figure 2**.

2.1 SITE USE AND FEATURES

The landfill tract was originally purchased by the District in 1960. Part of the Blackwell land purchase included a mined-out gravel pit. In subsequent years, the District added more than 1,000 acres to develop a multipurpose preserve which includes recreational amenities.

The District developed a plan for sequential land use at Blackwell; the acreage was reclaimed by building a hill and several lakes and creating recreational areas for users of the preserve. The hill was constructed as a landfill, first placing refuse from the surrounding communities as fill and then onsite soils as cover material.

The landfill was constructed in a series of lifts (layers) between 1965 and 1973. Approximately 1.5 million cubic yards of residential and commercial refuse were deposited in the landfill between 1965 and 1973. Approximately ½ of the completed hill was refuse and ½ was soil from the creation of Silver Lake. When landfilling was completed in 1973, the fill was flat-topped, about 100 feet above original ground surface. Over the next two years, another 50 feet of soil was added to the top of the landfill to create the rolling contours of the hill that are seen at Blackwell today. The final development of the hill is for recreational use and includes a sledding run, hiking paths, and is vegetated with native Illinois prairie plant species.

Because the Site and surrounding Forest Preserve are used for recreational purposes, the remedial objectives are based on recreational land-use. The future-use scenarios are the same as the current-use scenarios. Illinois statutes provide the authority for DuPage County to establish a Forest Preserve District but prohibits the District from selling its properties in the future. Blackwell Forest Preserve and the Site will remain a public preserve for recreational use only and part of the greater DuPage County Forest Preserve system.



LONG-TERM STEWARDSHIP PLAN

Site Description

2.2 SELECTED REMEDY

Concerned about potential environmental effects from the landfill, the District voluntarily installed and monitored groundwater wells around the landfill in the early 1970's. Volatile organic compounds (VOCs) were detected in several monitoring wells at the toe of the landfill in the early 1980's. In September 1989, the U.S. EPA and the District entered into an Administrative Order by Consent (AOC) whereby the District agreed to conduct a remedial investigation (RI) and feasibility study (FS) for the Site. The Site was added to the NPL in February 1990 and the RI/FS was completed in June 1995.

The baseline risk assessment, conducted as part of the RI/FS, concluded there were no unacceptable risks to human health or the environment from the landfill. Furthermore, because the landfill was located within the greater Blackwell Forest Preserve, the risk assessment concluded the landfill did not present future risks to human health or the environment. However, findings from the RI identified the following concerns:

- Leachate containing low levels of VOCs was leaking from the landfill and forming a plume in groundwater that extended approximately 200 feet downgradient in the upper (sand and gravel) aquifer;
- The landfill was constructed without a leachate collection system (LCS); and,
- In 1973 when the landfill was completed, applicable landfill regulations at 35 Illinois Administrative Code (IAC) Part 807 required a minimum of two feet of low permeability soil be used to cap a non-hazardous waste landfill. Soil borings placed on the landfill identified areas where the final cover did not meet these requirements.

Based on these findings, U.S. EPA and the District entered into an AOC in March 1996, Docket Number V-W-'96-C-341, which required the District to expedite response actions at the Site. The second step was contingent long-term actions defined in the final selected remedy. The March 1996 AOC specified the following expedited response actions for the Site:

- Conduct pre-design investigations to determine if any areas of the landfill did not have a minimum of two feet of low permeability cover material, and then repair the cap to ensure two feet of low permeability material was present at all locations where wastes were buried;
- Design and install an LCS with a minimum of nine extraction wells, subsurface piping to transport extracted leachate to a central collection tank for storage, and transport to a permitted off-site facility for treatment and disposal;
- Install a passive landfill gas (LFG) collection system to augment the 25 existing gas vents;
- Provide evidence that trees on the landfill were not in areas where root penetration could allow percolation of precipitation through refuse within the landfill;
- Evaluate the existing monitoring well network and implement groundwater monitoring to ensure that VOC contaminant levels were not increasing or moving in a way that could jeopardize either human health or the environment;



LONG-TERM STEWARDSHIP PLAN

Site Description

- Enhance surface drainage from the landfill to eliminate pooling of surface water and to prevent erosion;
- Provide as-built plans of storm water drainage from the top of the landfill and make necessary modifications to ensure that contaminants within the landfill were not inadvertently being drained from the landfill to nearby areas of the forest preserve; and
- Maintain all components to ensure the continued operation of the systems in the short-term to prevent contamination of groundwater from exceeding Safe Drinking Water Act Maximum Contaminant Levels (MCLs) at the Forest Preserve's boundary.

The District completed the 1996 AOC response activities during the summer of 1998. On September 30, 1998, the U.S. EPA issued a Record of Decision (ROD) to define the final remedy for the Site.

The overall strategy for remediating the Site included the completed expedited response actions and the following contingent long-term actions:

- ICs in the form land and groundwater use restrictions;
- Long-term cap inspection and maintenance including storm water and erosion control;
- Long-term operation and maintenance of the landfill LCS with possible augmentation;
- Continued off-site treatment and disposal of landfill leachate;
- Long-term operation and maintenance of the passive LFG venting system with possible augmentation to active gas collection and on-site thermal treatment;
- Monitored natural attenuation (MNA) for ground water; and
- Long-term monitoring of the groundwater, the landfill gas, and the LCS.

The 1998 ROD established the remedial objectives for the Site. A copy of the 1998 ROD is included as **Appendix C**.

2.3 REMEDIAL ACTION SUMMARY

Pre-design investigations, remedial design and response action construction were all completed by September 1998. The District submitted draft and final copies of the *Operations and Maintenance (O&M) Plan* for U.S. EPA review. U.S. EPA approved the *Final O&M Plan* on February 25, 1999. **Figure 3** shows the locations and layout of the components of the remedial LCS and LFG system.

The 1998 ROD required implementation and compliance with land and groundwater activity and use limitations to prevent damage to the landfill cap, the groundwater and LFG monitoring well systems, the LCS and to prevent unacceptable exposures from hazardous substances remaining at the Site. Deed restrictions/restrictive covenants were first placed over the landfill on August 5, 1997; recorded as



LONG-TERM STEWARDSHIP PLAN

Site Description

Document R97-114214 in the Recorder's Office of DuPage County. On June 3, 1999, the District certified to the U.S. EPA that restrictive covenants/deed restrictions were in place.

The District has been continually operating the systems and implementing the work prescribed in the February 8, 1999 *Final Operations and Maintenance Plan (Montgomery Watson, 1999)*, and the revisions included in subsequent annual reports since that time. Montgomery Watson, Montgomery Watson Harza, MWH Americas, Inc. (MWH) or Stantec have monitored the systems and prepared monthly and annual status reports from 1999 to present.

The following tabulation lists the remedial objectives for the Site and summarizes the effectiveness of the remedy in achieving the remedial objectives defined in the 1998 ROD.

SYSTEM PERFORMANCE	
Remediation Objective	Performance Results
Reduce surface water infiltration	Infiltration was reduced by repairing the cap at locations where there was less than 2 feet of low permeability fill overlying the buried waste and establishing vegetation across the landfill slopes. The landfill cover is well established with vegetation to further reduce surface water infiltration.
Eliminate landfill seeps wherever identified	Each spring and after major rainfall events, District personnel inspected landfill side-slopes and repaired breakout areas.
Extract leachate from landfill	Nine leachate extraction wells were installed in a grid across the landfill, drilled to the elevation of the bottom of the landfill. The extraction wells are pumped continuously. The subsurface manifold system transports the extracted leachate to a holding tank on north side of landfill, where it is picked up weekly and transported to the Wheaton Sanitary District Water Treatment Plant for treatment and disposal. An average of 670,000 gallons of leachate has been extracted each year since the leachate collection system began operating in December 1997. As of January 2020, over 15,000,000 gallons of leachate had been extracted from the landfill.
Enhance collection and removal of landfill gas	Wellhead assemblies were installed on LCS wells to collect LFG at these locations. Conveyance piping was installed to connect existing LFG vents and LCS wells to a single vent stack at the top of the landfill.
Establish Native Illinois prairie vegetation on the landfill	The landfill slopes were established with natural Illinois prairie species. The District maintains the vegetation in accordance with their best management practices including invasive species removal, herbicide applications, native seed collection and dispersal and controlled "prairie burns" to replicate pre-historic events which resulted in the native Illinois ground cover.
Monitored Natural Attenuation of Groundwater	VOCs are the contaminants of concern in groundwater. The final remedy selected for groundwater beyond the landfill boundary is MNA. The District has performed a total of 37 groundwater sampling events at the Site since 1991. Concentrations of VOCs in groundwater have consistently decreased since the RI was completed in 1994. The 1998 ROD predicted groundwater contamination would achieve cleanup objectives in less than 30 years. Since that time, VOC concentrations in groundwater have attenuated below cleanup objectives.



LONG-TERM STEWARDSHIP PLAN

Site Description

2.4 DELETION FROM NPL

Over the past 30 years, the District has completed the response items and implemented the selected remedies for the Site. The U.S. EPA and Illinois EPA have determined that the remedial objectives have been met, and the Site will be removed from the NPL. Beginning in December 2019, the Agencies began taking actions to delist the Site from the NPL. The Site is planned for direct deletion from the NPL in September 2020. Following deletion from the NPL, the Illinois EPA will become the lead Agency for the Site.



LONG-TERM STEWARDSHIP PLAN

Long-Term Stewardship

3.0 LONG-TERM STEWARDSHIP

This section describes how the District will manage the Site after it is delisted from the NPL. The District is committed to long-term stewardship of the landfill including activity and land use limitations, maintenance and monitoring of the engineered remedial systems, and annual reporting to the U.S. EPA and Illinois EPA.

3.1 INSTITUTIONAL CONTROLS

ICs, in the form of deed restrictions/restrictive covenants (Document R1997-114214), were placed over the 35-acre landfill in August 1997. The District certified to the U.S. EPA that ICs were in place in June 1999. A groundwater use restriction (Document R2008-079676) was placed over two smaller, peripheral tracts (“Tracts 1 and 2”) in May 2008. Therefore, the Site consists of the landfill and the two smaller, peripheral tracts. The ICs for areas that do not support unrestricted use (UU) and/or unrestricted exposure (UE) are summarized below.

Table - Summary of Implemented Institutional Controls

Media, engineered controls, and areas that do not support unrestricted use/ unrestricted exposure based on current conditions	Impacted Parcel(s)	IC Objective	Title/ Date of Instrument
<i>Landfill</i> – Capped with solid waste landfill cover; leachate extraction system; passive landfill gas system and land use restrictions	The 35-acre landfill	Prohibit interference with landfill cap, remedial components and nonrecreational uses	Declaration of Deed Restrictions and Restrictive Covenants R1997-114214 dated August 5, 1997
<i>Groundwater</i> – Groundwater use restrictions preventing consumptive, extractive, or other use of the groundwater underlying the Site	The 35-acre landfill; Tracts 1 & 2 outside the landfill	Prohibit exposure to groundwater that has not achieved cleanup objectives ¹ .	Declaration of Deed Restrictions and Restrictive Covenants; R1997-114214 dated August 5, 1997 and

¹ The selected remedy for groundwater beneath the landfill boundary is an IC prohibiting groundwater use. The selected remedy for groundwater outside the landfill boundary is MNA. Groundwater has achieved cleanup objectives outside the landfill boundary; however, the groundwater use restrictions (Document R2008-079696) placed on those areas prior to completion of the remedy (Tracts 1 & 2) will remain. Refer to Section III. Monitoring Results on pages 8-9 of the *Final Closeout Report* (U.S. EPA, 2020) for U.S. EPA concurrence that groundwater restoration outside the landfill boundary is complete.



LONG-TERM STEWARDSHIP PLAN

Long-Term Stewardship

			R2008-079696 dated May 14, 2008.
--	--	--	-------------------------------------

The ICs, defined in the 1997 Declaration of Deed Restrictions and Restrictive Covenants, include the following activity and land use limitations:

- There shall be no use of, or activity at, the Site that may interfere with, damages, or otherwise impair the effectiveness of any response action (or component thereof) selected and/or undertaken by U.S. EPA, or any party acting as agent for U.S. EPA pursuant to Section 104 of CERCLA, except with written approval of U.S. EPA, and consistent with all statutory and regulatory requirement;
- There shall be no consumptive, extractive, or other use of the groundwater underlying the Site that could cause unacceptable exposure to humans or animals to the groundwater underlying the Site. In addition, there shall be no installation of drinking water production wells on the Property, except as approved in writing by the U.S. EPA;
- There shall be no residential, commercial, industrial, or agricultural use of the landfill, including, but not limited to, any on-Property excavation, landfilling, mining, invasive construction, and drilling, except as approved in writing by U.S. EPA;
- There shall be no tampering with, or removal of, the containment or monitoring systems that remain on the Site as a result of implementation of any response action by U.S. EPA, or any party acting as agent for U.S. EPA, and which is selected and/or undertaken by U.S. EPA pursuant to Section 104 of CERCLA, except as approved in writing by U.S. EPA;
- There shall be no activities that cause destruction of vegetation on the landfill or otherwise could result in degradation of the remedial components; and
- There shall be no ignition sources on the landfill, except as approved in writing by U.S. EPA.

A copy of the Declaration of Deed Restrictions and Restrictive Covenants, including updated figures depicting the Site, are included in **Appendix A**.

3.2 EFFECTIVE IMPLEMENTATION AND EVALUATION OF ACTIVITY AND USE LIMITATIONS

Any development of the Site is restricted by the ICs. The District has a Charter that prohibits the sale of any portion of the Forest Preserve to a private party. The Charter provides that the sale of any portion of the Forest Preserve can only be conferred by the State Legislature. In addition, the deed restrictions will be updated to include restrictive covenants derived from the Illinois Uniform Environmental Covenant Act (UECA) Model Environmental Covenant (EC). A draft UECA EC was prepared by the District and submitted to the Illinois EPA and U.S. EPA for review and comment in February 2020, per a request from Illinois EPA, and is being reviewed under a separate effort. Effective implementation of the activity and use limitations



LONG-TERM STEWARDSHIP PLAN

Long-Term Stewardship

will be achieved by the District reviewing the ICs and certifying to the Illinois EPA annually that the restrictions remain in place.

3.3 ENGINEERED REMEDIAL SYSTEMS

Engineered remedial systems were constructed as a result of the response action by U.S. EPA and Illinois EPA pursuant to Section 104 of CERCLA. The ICs prohibit any activities that could impair response actions or tamper with, or removal of, the containment or monitoring systems that remain on the Site. The engineered systems include:

- **Landfill Cover:** The landfill cover consists of a minimum two feet of low permeability cover material at all locations where waste is buried. The landfill cover is part of the containment strategy for this Site. The long-term remedial objective for the cap is to minimize infiltration into the landfill, and eliminate potential direct exposure to leachate, landfill gas, and contaminated soil/waste material within the landfill.
- **Vegetated Cover:** The vegetated cover consists of the restored native prairie grasses over the landfill slopes. Proper maintenance of the vegetated cover prevents erosion to the landfill cap, reduces surface water infiltration, and provides an ecological habitat for plants and animals.
- **LCS System:** The LCS system includes nine extraction wells, wellheads, leachate well pumps, conveyance pipe systems, two lift stations, a leachate holding tank system, a compressor system, and system controls. Leachate collection and off-site disposal is part of the containment strategy for this Site. The critical objective is to manage the threat of the leachate migration and exposure. Leachate collection has been effective in limiting migration of leachate outside the landfill limits and is necessary to maintaining the groundwater restoration that has occurred through natural attenuation.
- **Passive LFG Venting System:** The passive LFG system consists of 13 vents and nine (9) extraction wells connected to conveyance piping and a main vent stack at the top of the Landfill. The objective of the landfill gas system is to appropriately manage landfill gas to minimize its migration into ground water or through the cap. By reducing gas buildup beneath the cap, it is anticipated that full recreational use of the hill can be maintained.
- **Site Security:** Site security consists of fencing, vaults and gates around LCS and LFG components, as well as posted signage which warn and restrict unauthorized access. The security around the landfill appurtenances prevents unauthorized users from tampering with, or being exposed to, LFG and/or leachate.

3.4 EFFECTIVE IMPLEMENTATION AND EVALUATION OF ENGINEERED REMEDIAL SYSTEMS

Effective implementation and evaluation of the remedial systems will be accomplished through continued stewardship of those systems. The District has performed O&M of the Site's remedial systems for 22 years



LONG-TERM STEWARDSHIP PLAN

Long-Term Stewardship

and reported the results of those operations to the U.S. EPA and Illinois EPA within annual reports. The remedial systems in their current configuration have been shown to be effective in meeting the remedial objectives for the Site and are protective of human health and the environment. The District will continue O&M of the Site's remedial systems and continue to monitor groundwater at existing wells outside the landfill boundaries.

3.4.1 O&M Plan

The District will continue to provide O&M following the guidance within the U.S. EPA-approved 1999 *Final O&M Plan* and subsequent Addendums. The O&M Plan includes the following activities:

- General O&M Activities – General O&M involves the inspection and maintenance of security measures around the LCS and LFG components, upkeep of access roads, and control of vegetation around the LCS and LFG components.
- Landfill Cover – Monitoring of the landfill cover includes routine inspections for erosion, ponding, siltation of drainage ways, and inspections for dead or stressed vegetation. Additionally, the District inspects the cover after any rainfall event of greater than 4.5 inches within a 24-hour period.
- LFG Venting System – Monitoring of the LFG system includes inspecting the system components and collecting performance measurements of LFG pressure, composition (i.e., methane, oxygen, carbon dioxide) and flow rates at the individual LFG vents and main vent stack. In addition, the District collects quarterly samples from the main vent stack and calculates cumulative risk to recreational users from exposure to LFG.
- LCS System – Monitoring of the LCS includes inspecting the LCS components, measuring leachate elevations at the LCS components. Leachate elevations are also measured at the landfill to evaluate if additional extraction wells are necessary. Monitoring also includes recording system performance, calculating the leachate volume removed over time, documenting leachate elevations within the landfill over time, and routine inspections of the LCS components to identify any repairs required to keep the system operational. The District collects quarterly leachate samples from the holding tank for laboratory analysis to comply with the disposal permit requirements.

The list of routine O&M activities is summarized in **Table 1**.

3.4.2 LFG Sampling

The District will continue collecting LFG samples for laboratory analysis from the main vent stack on a quarterly basis. The LFG samples will be collected over an 8-hour period in a laboratory provided 6-liter summa canister equipped with flow regulator, connected to the main vent stack sample port using Teflon-lined tubing. The LFG samples will be analyzed for fixed gases (methane, carbon dioxide, oxygen, and nitrogen), VOCs and total non-methane organic compounds (TNMOC) using the following methods:

- Fixed gases using U.S. EPA Method 3C;
- VOCs using U.S. EPA Method TO15; and



LONG-TERM STEWARDSHIP PLAN

Long-Term Stewardship

- TNMOC in accordance with U.S. EPA Modified Method 25C.

The District will continue calculating the cumulative risk to the recreational user from LFG exposure following guidance in the *Final Landfill Gas Trigger Level Report* (MWH, 2006). In the event the Site is issued a permit pursuant to 35 Illinois Administrative Code Part 201, the sampling procedures specified by the permit shall supersede those noted above.

3.4.3 Leachate Sampling

The District is required to collect quarterly samples from the leachate holding tank for metals, general water quality parameters, and organic toxic pollutants listed in the leachate disposal permit.

According to the permit, leachate samples must be collected and analyzed for partial scan parameters (metals and conventional water quality parameters) on a quarterly basis. In addition, leachate samples must be collected and analyzed for full scan parameters (metals, conventional water quality parameters, and organic toxic pollutants) semi-annually.

- Metals include: Arsenic, Barium, Boron, Cadmium, Chromium (total), Copper, Iron (total), Lead, Manganese, Mercury, Nickel, Selenium, Silver, and Zinc.
- Conventional Water Quality Parameters include: Ammonia (as Nitrate), Biological Oxygen Demand, Chemical Oxygen Demand, Chloride, Cyanide, Oil and Grease, pH, Phenols, Sulfate, Total Dissolved Solids, and Total Suspended Solids.
- Organic Toxic Pollutants include: Volatile Organic Compounds, Acid Compounds, Base/Neutrals, and Pesticides as defined in 40 Code of Federal Regulations 122.

The District will continue to collect LCS samples in accordance with its disposal permit.

3.4.4 O&M Schedule

The O&M schedule for inspection, maintenance and monitoring is provided in **Table 1**.

3.4.5 Vegetation Management

Maintenance of the Illinois native prairie grasses will be conducted in accordance with District best management practices. District management practices include the following activities:

- Woody species removal;
- Invasive species removal;
- Native seed collection and dispersal; and
- Periodic prairie burns to replicate prehistoric events.

The District will continue to manage the landfill vegetation on a seasonal and as-needed basis.



LONG-TERM STEWARDSHIP PLAN

Long-Term Stewardship

3.4.6 Long-Term Groundwater Monitoring

The District will continue to monitor groundwater outside the landfill boundary. The purpose of the monitoring program is to:

- Continue to evaluate the effectiveness of the treatment/containment components on the landfill;
- Continue to monitor chemical composition of groundwater adjacent to the landfill; and
- Demonstrate natural attenuation continues to be an effective remedial strategy for this Site.

Twenty-six monitoring wells are included in the monitoring program. The wells are grouped as follows:

- Detection wells, located between the landfill and the downgradient Forest Preserve boundary;
- Compliance wells, located along the downgradient Site boundary; and
- Other monitoring wells/piezometers, for water level measurement only.

The monitoring wells are further grouped into those screened in the upper, glacial outwash aquifer (**Figure 4**), and those screened in the lower, limestone bedrock aquifer (**Figure 5**). The 26 wells are assigned to the following groupings:

Detection Monitoring Wells

Glacial Outwash Aquifer Wells

G117 G127
G118S G129
G126 G130

Bedrock Wells

G140D
G128D

Compliance Monitoring Wells

Glacial Outwash Aquifer Wells

G122 G147

Bedrock Wells

G133D G138



LONG-TERM STEWARDSHIP PLAN

Long-Term Stewardship

Water Level Wells

<u>Glacial Outwash Aquifer Wells</u>		<u>Bedrock Wells</u>
P2	G133S	G132D
G107S	G142	G139
G114	G143	G134
G121	G144	G135
G123		G137

Groundwater samples will be collected using the following procedures:

- Static water levels will be measured at each of the detection, compliance, and water level wells.
- Groundwater samples will be collected at 8 detection and 4 compliance monitoring wells. Monitoring wells will be purged with a decontaminated, submersible pump using low-flow methods. Dedicated tubing will be used in each well. Wells will be purged until field parameters (i.e., pH, specific conductivity, turbidity, dissolved oxygen, temperature, and oxidation-reduction potential) have stabilized for three consecutive readings.
- The groundwater samples will be collected from the pump discharge port following stabilization into laboratory provided sample containers.
- Quality control (QC) samples (e.g., duplicates, matrix spike/matrix spike duplicates [MS/MSD], field blanks and trip blanks) will be collected as follows:
 - Duplicate samples at a rate of one per sampling event;
 - MS/MSD samples at a rate one per sampling event;
 - Field blanks at a rate of one per sampling event; and
 - Trip blanks at a rate of one per cooler.
- Following collection, the samples will be placed in coolers packed with ice. The samples will be delivered under chain-of-custody to an Illinois-certified laboratory.
- The groundwater samples will be analyzed for Target Compound List VOCs (according to U.S. EPA method 8260B).

The District will collect water level data and groundwater samples on an annual basis in the fall of each year. The groundwater data will be reviewed by the District and included within the Annual Report to the Agencies.



LONG-TERM STEWARDSHIP PLAN

Reporting

4.0 REPORTING

4.1 ANNUAL REPORTING

The District will submit reports that include confirmation of compliance with the activity and use limitations in the ICs. The District will prepare an “Annual Report” for submittal to the Illinois EPA and U.S. EPA. The Annual Report will include the following for each monitoring period:

- Summary of O&M activities undertaken by the District;
- Description of repairs and maintenance activities performed;
- Documentation of total leachate extracted and resulting changes in leachate levels;
- Data collected from the LFG system will be summarized;
- Evaluation of the LCS and LFG systems performance;
- Groundwater monitoring data;
- Recommendations; and
- Copies of laboratory data sheets.

The Annual Report will cover a one-year period beginning on January 1st through December 31st and will be submitted to the Agencies in the spring of the following year.

4.2 COMPLIANCE REPORTING

The draft UECA EC will require the District to submit to Illinois EPA a certification statement that the activity and use limitations remain in place. Additionally, the District will be required to notify the U.S. EPA and Illinois EPA as soon as possible of any actions or conditions that would constitute a breach of the ICs. On an annual basis, the District will be required to submit the following certification statement to Illinois EPA:

“I certify under penalty of law that the specific Activity and Use Limitations identified in Paragraph 7 of the Uniform Environmental Covenant for DuPage County Landfill/Blackwell Forest Preserve Property remain in place. I am aware that any person who knowingly makes a false, fictitious, or fraudulent material statement to the Illinois EPA, either orally or in writing, commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony (415 ILCS 5/44(h)(8)).”

The certification statement will be provided in writing to the Illinois EPA annually, on or before, the anniversary of recording of the final UECA EC.



LONG-TERM STEWARDSHIP PLAN

Communication Plan

5.0 COMMUNICATION PLAN

The purpose of this Communication Plan is to provide clear, effective lines of communication between the District, Illinois EPA and U.S. EPA about activities and developments at the Site. Submittal of any notice, demand, request, consent, approval, or communication that either party desires, or is required to give to the other, shall be in writing and addressed. The following individuals are current contacts for the Site:

To the District:

Forest Preserve District of DuPage County
Director of Resource Management and Development – Mr. Daniel L. Zinnen
Email: dzinnen@dupageforest.com
Phone: 630-463-8710
P.O. Box 5000
Wheaton, Illinois 60189-5000

To the Agencies:

U.S. Environmental Protection Agency
Remedial Project Manager – Ms. Karen Mason-Smith
Email: mason-smith.karen@epa.gov
Phone: 312-886-6150
77 West Jackson Boulevard
Chicago, IL 60604

Illinois Environmental Protection Agency
Federal Sites Remediation Section
Project Manager – Ms. Nicole Wilson
Email: Nicole.wilson@illinois.gov
Phone: 217-785-8729
P.O. Box 19276
Springfield, Illinois 62794-9276

Illinois Environmental Protection Agency
Division of Legal Counsel
P.O. Box 19276
Springfield, Illinois 62794-9276

To the Consultant:

Stantec Consulting Services Inc.
Project Coordinator – Mr. David Powers
Email: david.powers@stantec.com
Phone: 630-576-9096
701 East 22nd Street, Suite 115
Lombard, Illinois 60148



LONG-TERM STEWARDSHIP PLAN

Cost Estimate

6.0 COST ESTIMATE

The Section describes the estimated annual operational costs to operate, maintain and monitor the remedial systems and discusses the sourcing and funding provided by the District.

6.1 ANNUAL OPERATING COSTS

The District has been documenting costs for annual O&M at the Site over the past 17 years. The average annual cost to operate, maintain and monitor the remedial systems at the Site has been \$364,000 per year. However, these costs do not take inflation into the account for the present-day value of past expenses. Stantec has prepared a cost estimate based on anticipated long-term stewardship activities and average O&M costs over the past three years. The reserve estimate is provided below:

Estimated Annual Systems Operations / O&M Costs:

Task	Groundwater Monitoring	LFG/LCS OM&M	Leachate Disposal	Prairie/Cap Maintenance	Repairs & Improvements	Compliance Reporting	Project Management	Contingency 10%	Annual Total
Estimated Annual Costs	\$12,000	\$94,000	\$101,000	\$69,000	\$14,000	\$25,000	\$66,000	\$39,000	\$420,000

The estimated annual cost for operations, maintenance and monitoring is \$420,000. The District establishes budgets for landfill O&M costs each year.

6.2 ENSURING FUNDING AND OTHER RESOURCES ARE ADEQUATE AND SUSTAINABLE

The District is committed to stewardship of the Site now and in the future. The District has two sources of funding dedicated to environmental activities that can be used for stewardship of the Site. The sources of funding are described below.

- The Environmental Responsibility Fund (ERF) was established in 1981 pursuant to an Agreed Judgment, Case No. 79 CH 240, 18th Judicial Circuit Court. Pursuant to the requirements of that judgment, the District created the ERF and deposited \$2,000,000 into this fund. The fund is used to pay liabilities imposed by the Judgment or for other District landfills, which includes Blackwell landfill. When funding from the ERF is used for any purpose, the fund is replenished to the required amount. The fund shall be maintained in perpetuity or until otherwise ordered by the Court. The Court retains jurisdiction to enforce the Judgment. The ERF has a current balance of \$2,000,000.
- The District-Wide Environmental Fund (DWEF) was established by the District in June 2004 by Ordinance No. 04-075. Pursuant to Ordinance No. 04-075, the monies comprising the DWEF shall be used to pay costs associated with environmental requirements at the closed landfill sites owned by the District, which includes Blackwell Landfill. Commencing July 1, 2004, the fund is to be part of each fiscal year budget. The DWEF currently has a balance of \$61,000,000. Expenditures from the DWEF, including for Blackwell Landfill, is expected to be approximately \$2,000,000 per year for the foreseeable future.



LONG-TERM STEWARDSHIP PLAN

Cost Estimate

In addition to adequate funding sources, the District maintains staff dedicated to the operations, maintenance and monitoring of their closed landfills. The Districts' Division of Resource Management consists of engineers, scientists, environmental technicians, and grounds personnel that are experienced in the management of closed landfills and landfill appurtenances. Where needed, the District issues contracts for engineering and construction services.



LONG-TERM STEWARDSHIP PLAN

References

7.0 REFERENCES

Montgomery Watson, 1999. *Final Operations and Maintenance Plan*, February 1999.

MWH, 2006. *Final Landfill Gas Trigger Level Report*, March 2006.

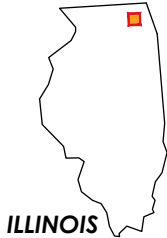
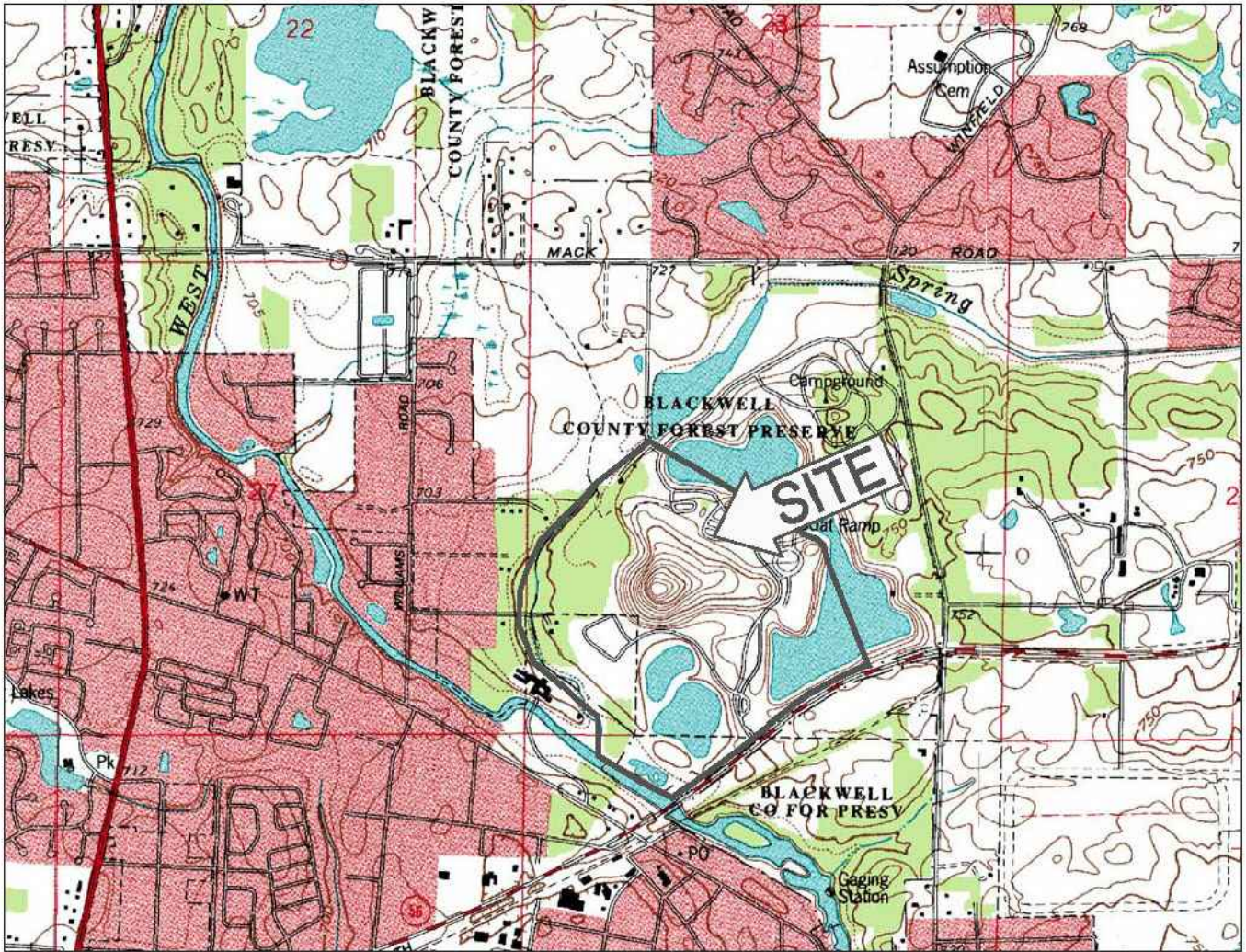
U.S. EPA, 2012. *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites*, OSWER 9200.0-77, EPA-540-R-09-002, December 2012.

U.S. EPA, 2020. *Final Closeout Report*, April 2020.



FIGURES

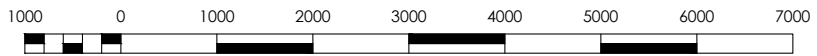




ILLINOIS



SCALE IN MILES



SCALE IN FEET

REFERENCE: USGS 7.5 MINUTE QUADRANGLES;
NAPERVILLE, ILLINOIS, 1993



701 E 22nd Street, Suite 115
Lombard, IL 60148-5404

PHONE: (630)792-1680 FAX: (630) 792-1681

FOR:

BLACKWELL LANDFILL NPL SITE
DUPAGE COUNTY, ILLINOIS

SITE LOCATION MAP

FIGURE:

1

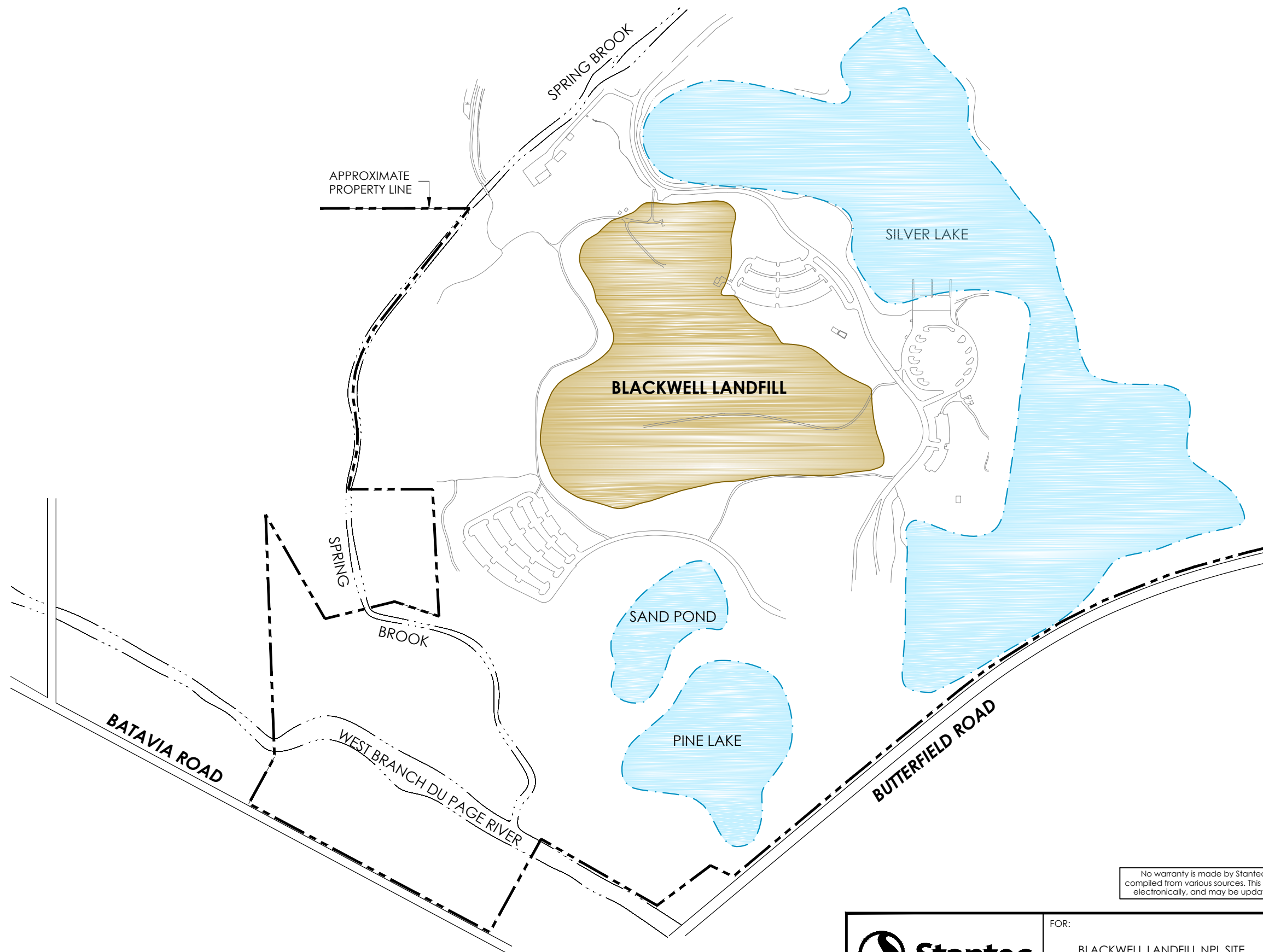
JOB NUMBER:
182601311

DRAWN BY:
JRO


CHECKED BY:
PWM

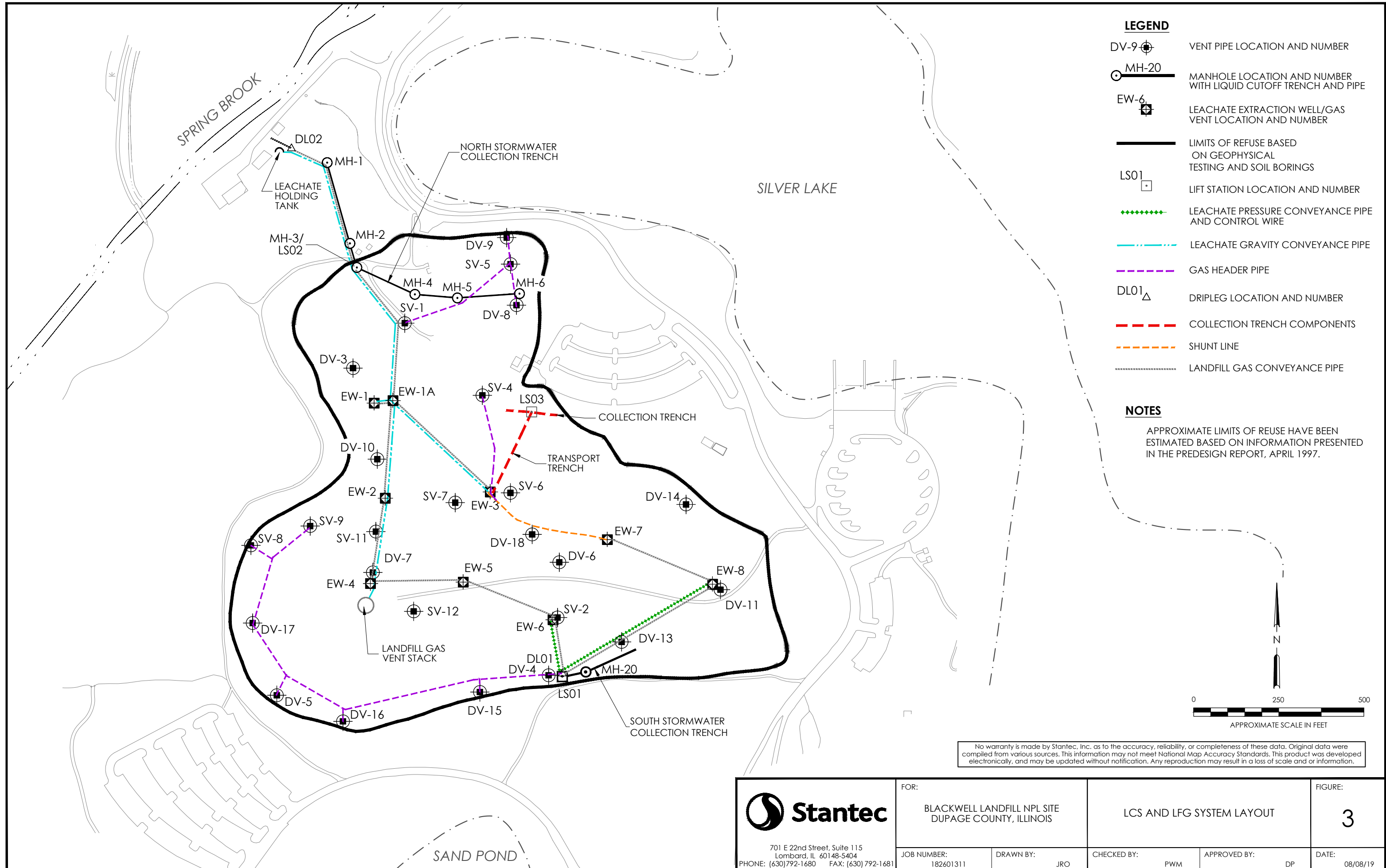
APPROVED BY:
DP

DATE:
08/08/19



No warranty is made by Stantec, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and/or information.

 701 E 22nd Street, Suite 115 Lombard, IL 60148-5404 PHONE: (630)792-1680 FAX: (630) 792-1681	FOR: BLACKWELL LANDFILL NPL SITE DUPAGE COUNTY, ILLINOIS		SITE FEATURES MAP		FIGURE: 2
	JOB NUMBER: 182601311	DRAWN BY: JRO	CHECKED BY: PWM	APPROVED BY: DP	DATE: 08/08/19

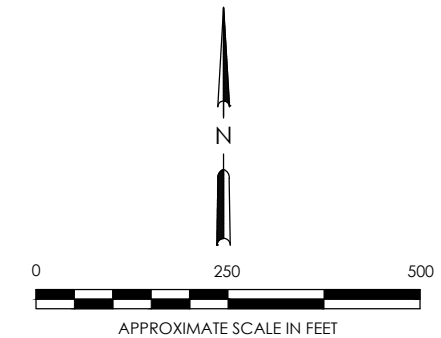


LEGEND

- DV-9 VENT PIPE LOCATION AND NUMBER
- MH-20 MANHOLE LOCATION AND NUMBER WITH LIQUID CUTOFF TRENCH AND PIPE
- EW-6 LEACHATE EXTRACTION WELL/GAS VENT LOCATION AND NUMBER
- LIMITS OF REFUSE BASED ON GEOPHYSICAL TESTING AND SOIL BORINGS
- LS01 LIFT STATION LOCATION AND NUMBER
- LEACHATE PRESSURE CONVEYANCE PIPE AND CONTROL WIRE
- LEACHATE GRAVITY CONVEYANCE PIPE
- GAS HEADER PIPE
- DL01 DRIPLEG LOCATION AND NUMBER
- COLLECTION TRENCH COMPONENTS
- SHUNT LINE
- LANDFILL GAS CONVEYANCE PIPE

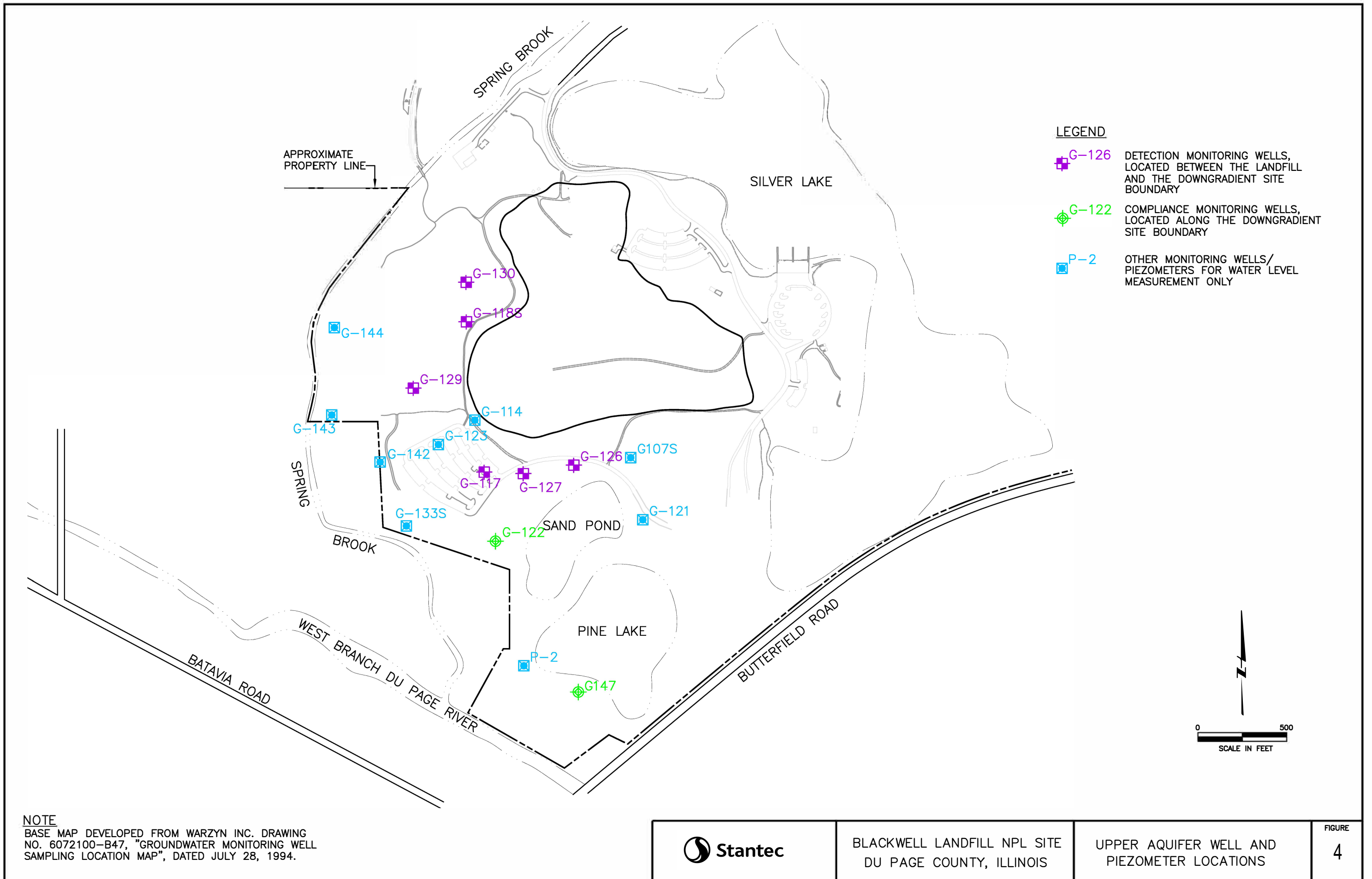
NOTES

APPROXIMATE LIMITS OF REUSE HAVE BEEN ESTIMATED BASED ON INFORMATION PRESENTED IN THE PREDESIGN REPORT, APRIL 1997.



No warranty is made by Stantec, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and/or information.

<p>701 E 22nd Street, Suite 115 Lombard, IL 60148-5404 PHONE: (630)792-1680 FAX: (630)792-1681</p>	FOR:		BLACKWELL LANDFILL NPL SITE DUPAGE COUNTY, ILLINOIS		FIGURE:	3
	JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	
	182601311	JRO	PWM	DP	08/08/19	



- LEGEND**
- G-126 DETECTION MONITORING WELLS, LOCATED BETWEEN THE LANDFILL AND THE DOWNGRAIDENT SITE BOUNDARY
 - ⊙ G-122 COMPLIANCE MONITORING WELLS, LOCATED ALONG THE DOWNGRAIDENT SITE BOUNDARY
 - P-2 OTHER MONITORING WELLS/PIEZOMETERS FOR WATER LEVEL MEASUREMENT ONLY

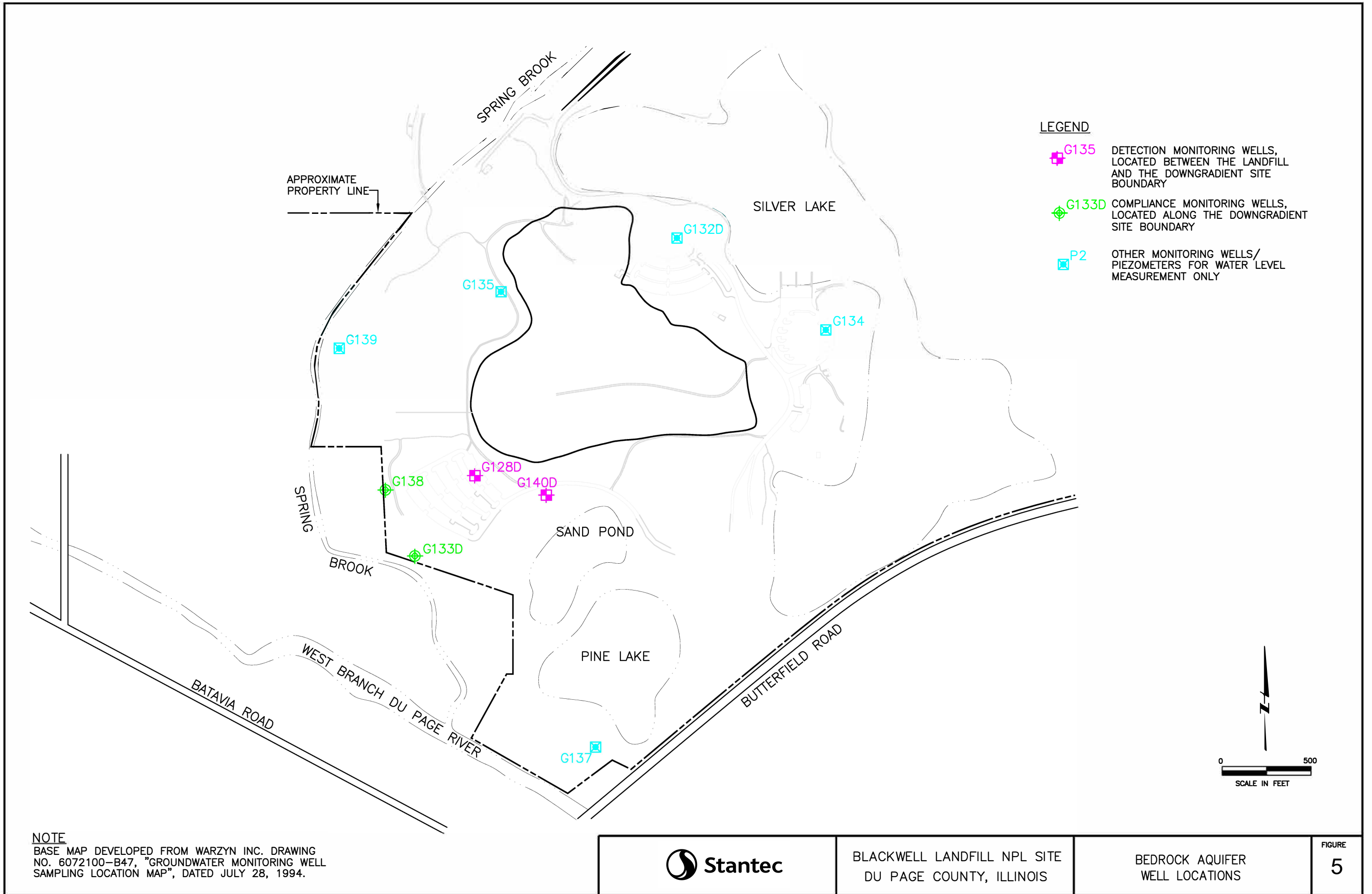
NOTE
 BASE MAP DEVELOPED FROM WARZYN INC. DRAWING NO. 6072100-B47, "GROUNDWATER MONITORING WELL SAMPLING LOCATION MAP", DATED JULY 28, 1994.



BLACKWELL LANDFILL NPL SITE
 DU PAGE COUNTY, ILLINOIS

UPPER AQUIFER WELL AND
 PIEZOMETER LOCATIONS

FIGURE
 4



- LEGEND**
- G135 DETECTION MONITORING WELLS, LOCATED BETWEEN THE LANDFILL AND THE DOWNGRADIENT SITE BOUNDARY
 - ◆ G133D COMPLIANCE MONITORING WELLS, LOCATED ALONG THE DOWNGRADIENT SITE BOUNDARY
 - P2 OTHER MONITORING WELLS/PIEZOMETERS FOR WATER LEVEL MEASUREMENT ONLY

NOTE
 BASE MAP DEVELOPED FROM WARZYN INC. DRAWING NO. 6072100-B47, "GROUNDWATER MONITORING WELL SAMPLING LOCATION MAP", DATED JULY 28, 1994.

TABLE



Table 1
Inspection, Monitoring, and Maintenance Schedule
DuPage County Landfill Blackwell Site

The frequencies will be modified as experience with the systems dictate. The following forms are available for use during inspection, monitoring, and maintenance activities:

- Site Visit Operating Log
- Leachate Disposal Log
- Leachate and LFG Monitoring Form
- Maintenance and Repair Record Form
- Inspection Reporting Form
- Gas Vent Monitoring Form
- Replacement Equipment and Parts Log

AS-NEEDED BASIS

- | | |
|--|---|
| <ul style="list-style-type: none"> • Landfill Cover
(Following 10-yr., 24-hr. rainfall event) | <ul style="list-style-type: none"> – Inspect for signs of erosion and cracks – Inspect for water ponding – Inspect for siltation of drainage ways – Inspect for gas bubbling through landfill topsoil |
| <ul style="list-style-type: none"> • Control Building
(Following disposal of leachate) | <ul style="list-style-type: none"> – Record pump counter readings – Record depth of leachate in holding tank
(before and after disposal) |
| <ul style="list-style-type: none"> • Site Conditions | <ul style="list-style-type: none"> – Document date and time – Document weather conditions – Conduct general inspection (fence, locks, signs, etc.) |
| <ul style="list-style-type: none"> • Main Vent Stack | <ul style="list-style-type: none"> – Inspect valve settings – Conduct general inspection (fence, locks, signs, etc.) |

WEEKLY BASIS

- | | |
|---|---|
| <ul style="list-style-type: none"> • Control Building | <ul style="list-style-type: none"> – Visually check building exterior alarm lights – Visually check panel indicator lights – Check heater thermostat setting and status – Visually check building vents and fans – Inspect compressor and dryer operation – Drain water traps on compressor and dryer |
| <ul style="list-style-type: none"> • Leachate Holding Tank | <ul style="list-style-type: none"> – Inspect valve settings – Check volume in tank – General inspection – Visually check tank, leak detection, and dripleg riser conditions |

Table 1
Inspection, Monitoring, and Maintenance Schedule
DuPage County Landfill Blackwell Site

QUARTERLY MONITORING EVENTS

- Leachate Extraction Wells (wellheads)
 - Measure leachate level
 - Document pump cycle counts
 - Conduct general inspection
 - Adjust needle valve if the extraction rate is to be modified. Check air supply pressure
 - Check air pump pressure
 - Check level sensor air pressure
 - Inspect flow meter operation
 - Check air supply and pump discharge valve settings
 - Measure percent methane (CH₄)
 - Measure percent oxygen (O₂)
 - Measure percent carbon dioxide (CO₂)
 - Measure static pressure

- Leachate Lift Stations
 - Document pump cycle counts
 - Conduct general inspection
 - Verify pump operation
 - Check position of manual isolation valve
 - Measure percent methane (CH₄)
 - Measure percent oxygen (O₂)
 - Measure percent carbon dioxide (CO₂)
 - Measure static pressure

- LFG Vents
 - Measure leachate level
 - Conduct general inspection
 - Measure percent methane (CH₄)
 - Measure percent oxygen (O₂)
 - Measure percent carbon dioxide (CO₂)
 - Measure static pressure
 - Measure gas flow rate
 - Measure gas temperature

- Main Vent Stack
 - Conduct general inspection
 - Check manual valve position
 - Measure percent methane (CH₄)
 - Measure percent oxygen (O₂)
 - Measure percent carbon dioxide (CO₂)

Table 1
Inspection, Monitoring, and Maintenance Schedule
DuPage County Landfill Blackwell Site

QUARTERLY MAINTENANCE

- Compressor/Dryer Systems – Inspect and clean filters. Lubricate if necessary
- Leachate Holding Tank – Conduct required analytical testing
- Control Station – Remove water from condensate trap on supply air line
- Site Inspection – Inspect fenced areas (main vent stack, tank and compressor station)
 – Inspect posted signs and notices
 – Inspect access, including roads, to LCS and LFG system components
 – Inspect flush-mount vaults
 – Inspect for excessive or improper vegetation in and around LCS and LFG system components
- Landfill Gas Sampling (at main vent stack) – Conduct required LFG analytical testing
 – Measure gas flow rate
- Landfill Cover – Inspect for signs of erosion and cracks
 – Inspect for water ponding
 – Inspect for siltation of drainage ways
 – Inspect for stressed or dead vegetation

SEMI-ANNUALLY

- Leachate Holding Tank – Conduct required analytical testing
- Driplegs DL01 and DL02 – Check liquid levels in “U” traps if an active LFG extraction system is installed

ANNUALLY

- Compressor/Dryer Systems – Perform annual maintenance as necessary
- All Valves – Confirm valve operation by operating throughout entire range of motion several times
- Leachate Holding Tank – Inspect the operation of liquid level floats, interlocked controls, and warning lights
 – Inspect moisture probes (leak detection riser and tank interstice)
- Padlocks, Gates, Doors, etc. – Lubricate with grease and verify working condition
- Groundwater Monitoring – Collect water levels from 26 wells/piezometers
 – Collect groundwater samples for VOC analysis from 12 wells

**Table 1
 Inspection, Monitoring, and Maintenance Schedule
 DuPage County Landfill Blackwell Site**

Monitoring Location	Quarterly O&M Activities			Connected to LCS and LFG extraction system ^{1,3}
	Abandoned ¹	Monitor Leachate Levels ¹	Monitor LFG ^{1,2}	
SV-1		X		
SV-2 ⁴		X		
SV-3	X			
SV-4		X	X	X
SV-5		X	X	X
SV-6		X		
SV-7 ⁴		X		
SV-8		X	X	X
SV-9		X	X	X
SV-10	X			
SV-11		X		
SV-12		X		
DV-1	X			
DV-2	X			
DV-3		X		
DV-4		X		
DV-5		X	X	X
DV-6		X		
DV-7 ⁴		X		
DV-8		X	X	X
DV-9		X	X	X
DV-10		X	X	X
DV-11		X		
DV-12	X			
DV-13		X	X	X
DV-14		X		
DV-15		X	X	X
DV-16		X	X	X
DV-17		X	X	X
DV-18 ⁴		X	X	X
EW-1 ⁵		X	X	X
EW-1A ⁵		X	X	X
EW-2 ⁵		X	X	X
EW-3 ⁵		X	X	X
EW-4 ⁵			X	X
EW-5 ⁵		X	X	X
EW-6 ⁵		X	X	X
EW-7 ⁵		X	X	X
EW-8 ⁵		X	X	X
LS01 ⁵			X	X
LS02 ⁶				X
LS03 ^{5,7}				X
Main Vent ⁸			X	X

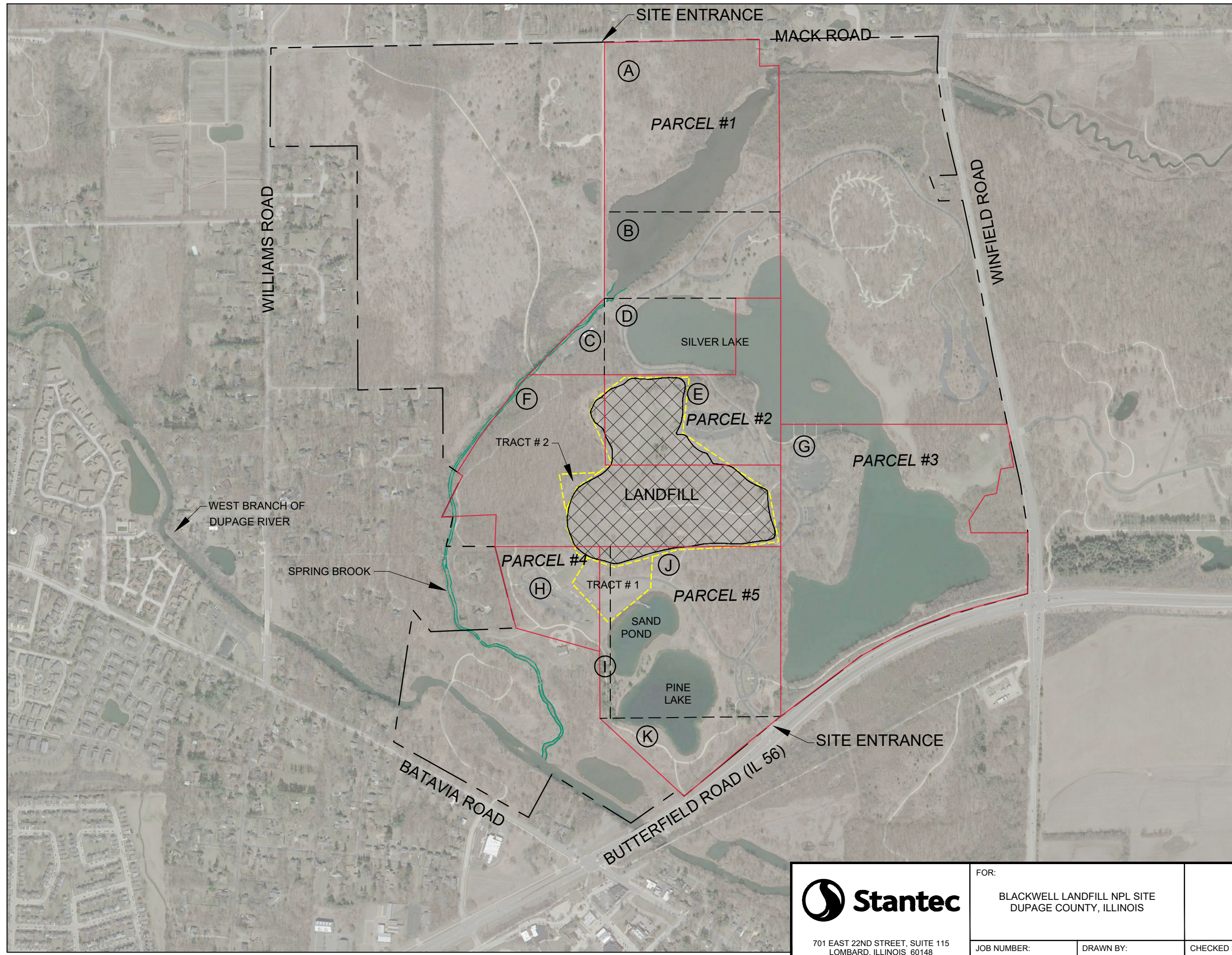
Table 1
Inspection, Monitoring, and Maintenance Schedule
DuPage County Landfill Blackwell Site

Notes:

1. "X" indicates data collection or action taken.
2. LFG monitoring includes static pressure, flow velocity, temperature, and composition (i.e., % CH₄, CO₂, and O₂).
3. Landfill gas vents are not connected to the LCS, they are used to measure depth-to-leachate.
4. Leachate levels are attempted at SV-2, SV-7, DV-7 and DV-18; however, obstructions in the casings of these vents do not allow for measurement of leachate levels (casings are kinked or cracked at the intervals encountered). The District will continue to monitor these vents for increasing leachate levels at these locations.
5. LFG flow velocity and temperature were not historically measured at extraction wells or lift stations. LFG temperature and flow velocity have been measured at extraction wells since May 2017 and September 2017, respectively, because the new well head configurations at these wells allow for collection of this data. Pump cycle counts for leachate are still documented.
6. LS02 is historically dry. No O&M data collected.
7. LS03 collects surface water only and conveys water to leachate holding tank. LS03 does not collect LFG and is not connected to the LFG Extraction System.
8. Static pressure is not measured at the main vent stack. The main vent stack is open to the atmosphere.

APPENDIX A
Deed Restrictions and Restrictive Covenants

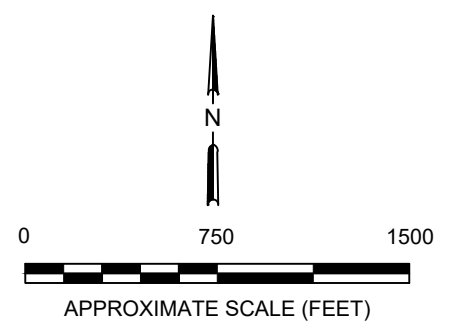




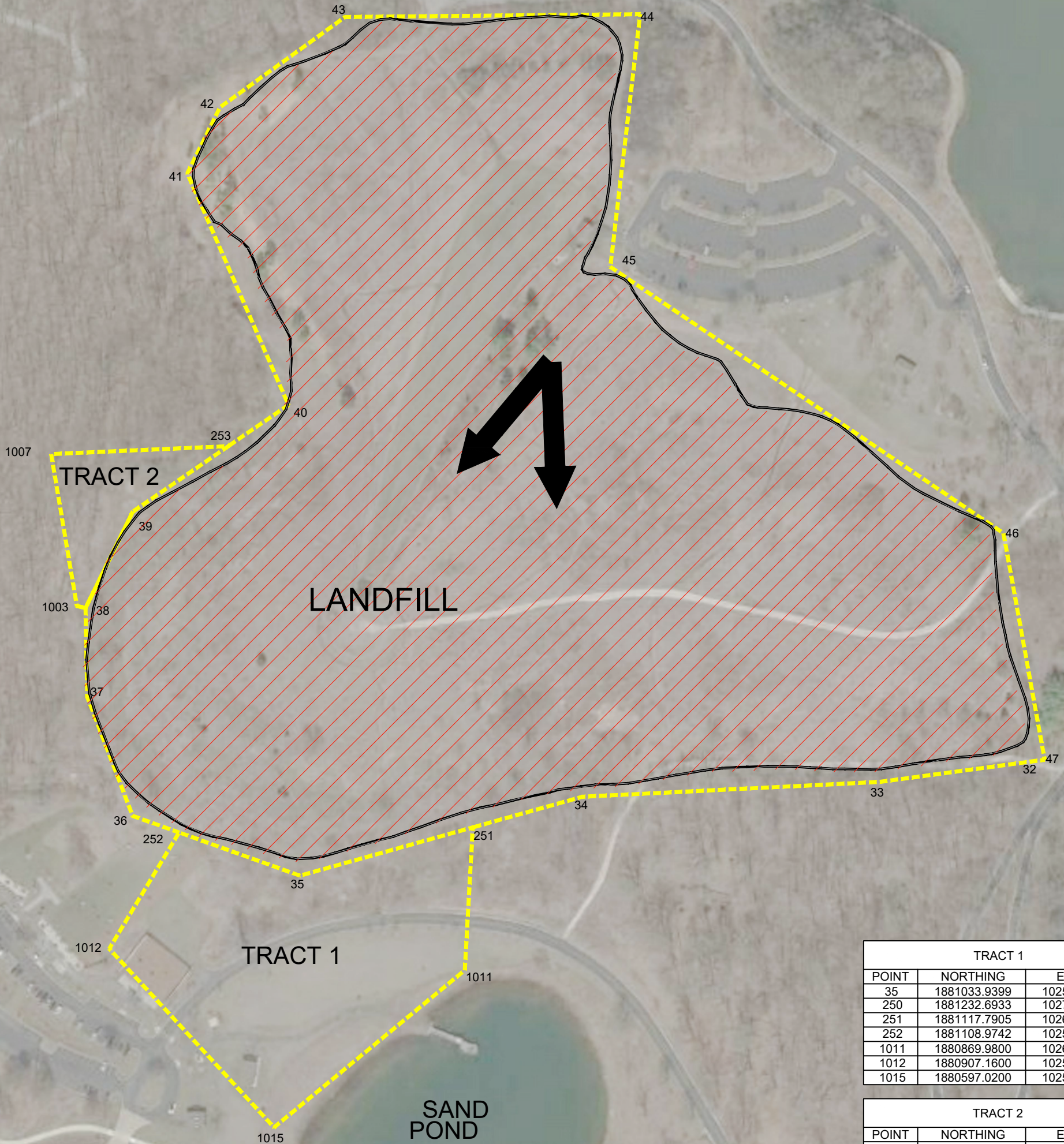
LEGEND

- LIMITS OF BLACKWELL FOREST PRESERVE
- DUPAGE COUNTY LANDFILL
- APPROXIMATE PARCEL BOUNDARY
- APPROXIMATE PROPERTY INDEX NUMBER (P.I.N.) BOUNDARY
- LIMITS OF DEED RESTRICTIONS/ RESTRICTIVE COVENANTS

TITLE COMMITMENT PARCEL NO.	SYMBOL	ASSOCIATED P.I.N.s
1	A	04-26-101-001
	B	04-26-102-001
	C	04-26-103-001
	D	04-26-103-002
2	E	04-26-302-001
3	F	04-26-302-002
4	G	04-26-400-004
5	H	04-26-302-005
	I	04-26-302-006
	J	04-26-302-007
	K	04-35-101-002



<p>701 EAST 22ND STREET, SUITE 115 LOMBARD, ILLINOIS 60148 PHONE: (630) 792-1680 FAX: (630) 792-1691</p>	FOR: BLACKWELL LANDFILL NPL SITE DUPAGE COUNTY, ILLINOIS		SITE LAYOUT MAP		FIGURE: 1
	JOB NUMBER: 182609972	DRAWN BY: MM	CHECKED BY: GC	APPROVED BY: DP	DATE: 03/13/2020



TRACT 1		
POINT	NORTHING	EASTING
35	1881033.9399	1025928.6401
250	1881232.6933	1027204.2939
251	1881117.7905	1026228.5498
252	1881108.9742	1025718.7595
1011	1880869.9800	1026214.7100
1012	1880907.1600	1025597.8200
1015	1880597.0200	1025883.6200





TRACT 2		
POINT	NORTHING	EASTING
38	1881498.2616	1025556.5186
39	1881665.7549	1025638.5612
253	1881779.4368	1025804.2809
1003	1881502.1600	1025541.5400
1007	1881765.8100	1025496.9200

LANDFILL		
POINT	NORTHING	EASTING
32	1881233.0182	1027203.9020
33	1881196.6908	1026934.6710
34	1881170.8982	1026418.5008
35	1881033.9399	1025928.6401
36	1881137.7465	1025638.2797
37	1881344.2397	1025559.5615
38	1881498.2616	1025556.5186
39	1881665.7549	1025638.5612
40	1881344.2397	1025908.7181
41	1882253.1780	1025733.2137
42	1882367.8278	1025789.9274
43	1882524.4823	1026006.9051
44	1882529.3002	1026518.9450
45	1882090.6132	1026467.2176
46	1881628.3649	1027149.3580
47	1881234.9125	1027220.9141

NOTES:

- LIMITS OF DEED RESTRICTIONS SURVEYED IN ILLINOIS EAST STATE PLANE COORDINATE SYSTEM BY AREA SURVEY COMPANY, HOMER GLEN, ILLINOIS (MARCH 2008).
- DEED RESTRICTION/RESTRICTIVE COVENANTS WERE PLACED OVER THE LANDFILL ON AUGUST 5, 1997; RECORDED ON DOCUMENT R97-114214. A GROUNDWATER USE RESTRICTION WAS PLACED OVER TWO SMALLER, PERIPHERAL TRACTS (TRACTS 1 AND 2) ON MAY 14, 2008; RECORDED AS DOCUMENT R2008-079696 IN THE RECORDERS OFFICE OF DUPAGE COUNTY.

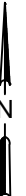
LEGEND

-  LIMITS OF POTENTIAL GROUNDWATER IMPACTS
-  LIMITS OF DEED RESTRICTIONS/COVENANTS
-  LANDFILL BOUNDARY (LIMITS OF REFUSE)
-  GENERALIZED GROUNDWATER FLOW DIRECTION (UPPER AQUIFER)

0 200 400



APPROXIMATE SCALE (FEET)



701 EAST 22ND STREET, SUITE 115
LOMBARD, ILLINOIS 60148
PHONE: (630) 792-1680 FAX: (630) 792-1691

FOR:
BLACKWELL LANDFILL NPL SITE
DUPAGE COUNTY, ILLINOIS

JOB NUMBER:
182609871

DRAWN BY:
MM

CHECKED BY:
GC

APPROVED BY:
DP

FIGURE:
2

DATE:
02/14/2020

R97-114214

97 AUG -5 PM 12:00

RECORDER
DU PAGE COUNTY

Plarney

*NC P.
5*

A DECLARATION OF DEED RESTRICTIONS AND RESTRICTIVE COVENANTS (DEED RESTRICTIONS) UPON REAL ESTATE TO THE DU PAGE COUNTY RECORDER OF DEEDS AS REQUIRED BY THE ADMINISTRATIVE ORDER BY CONSENT IN CONNECTION WITH THE DU PAGE COUNTY LANDFILL/BLACKWELL FOREST PRESERVE PROPERTY LOCATED WITHIN THE BLACKWELL FOREST PRESERVE.

*prepared by and mail to
Forest Preserve District of DuPage County
P.O. Box 2339 • 185 Spring Ave
Glen Ellyn, IL 60138*

**DECLARATION OF DEED RESTRICTIONS AND
RESTRICTIVE COVENANTS UPON REAL ESTATE**

The Forest Preserve District of DuPage County, owner of the real estate described below, hereby impose restrictions on that portion of the described real estate which is known as the DuPage County Landfill/Blackwell Forest Preserve, (hereinafter "the Site") within the Blackwell Forest Preserve, in Section 26, Township 39 North, Range 9 East, DuPage County, Illinois:

THAT PART OF THE SOUTHEAST QUARTER AND OF THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 39 NORTH, RANGE 9 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED BY COMMENCING AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER AND RUNNING THENCE NORTH 0 DEGREES 30 MINUTES 46 SECONDS WEST ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER, 1365.89 FEET FOR A PLACE OF BEGINNING; THENCE SOUTH 82 DEGREES 02 MINUTES 18 SECONDS WEST, 271.76 FEET; THENCE SOUTH 86 DEGREES 47 MINUTES 00 SECONDS WEST, 516.81 FEET; THENCE SOUTH 74 DEGREES 01 MINUTE 25 SECONDS WEST, 508.65 FEET; THENCE NORTH 70 DEGREES 41 MINUTES 00 SECONDS WEST, 308.36 FEET; THENCE NORTH 21 DEGREES 13 MINUTES 25 SECONDS WEST, 220.99 FEET; THENCE NORTH 1 DEGREE 29 MINUTES 15 SECONDS WEST, 154.05 FEET; THENCE NORTH 25 DEGREES 44 MINUTES 27 SECONDS EAST, 186.51 FEET; THENCE NORTH 55 DEGREES 11 MINUTES 40 SECONDS EAST, 327.61 FEET; THENCE NORTH 23 DEGREES 56 MINUTES 10 SECONDS WEST, 438.73 FEET; THENCE NORTH 25 DEGREES 57 MINUTES 50 SECONDS EAST, 127.91 FEET; THENCE NORTH 53 DEGREES 48 MINUTES 55 SECONDS EAST, 267.62 FEET; THENCE NORTH 89 DEGREES 06 MINUTES 17 SECONDS EAST, 512.06 FEET; THENCE SOUTH 6 DEGREES 22 MINUTES 08 SECONDS WEST, 441.73 FEET; THENCE SOUTH 56 DEGREES 13 MINUTES 58 SECONDS EAST, 824.01 FEET; THENCE SOUTH 10 DEGREES 39 MINUTES 50 SECONDS EAST, 399.91 FEET; THENCE SOUTH 82 DEGREES 02 MINUTES 18 SECONDS WEST, 17.02 FEET TO THE PLACE OF BEGINNING, IN WINFIELD TOWNSHIP, DU PAGE COUNTY, ILLINOIS, containing 35.25 acres.

As depicted on the attached map prepared by Montgomery Watson, drawing 1252008/04090040.

The following restrictions are imposed upon the Site, its present and any future owner (including heirs to the above described real estate), their authorized agents, assigns, employees, or persons acting under their direction or control, for the purposes of protecting public health or welfare or the environment, preventing interference with the performance, and maintenance, of any response actions selected and/or undertaken by the United States Environmental Protection Agency ("U.S. EPA"), or any party acting as an agent for the U.S. EPA, pursuant to Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). Specifically, the following deed restrictions shall apply to the Site:

1. There shall be no use of, or activity at, the Site that may interfere with, damage, or otherwise impair the effectiveness of any response action (or component thereof) selected and/or undertaken by U.S. EPA, or any party acting as agent for U.S. EPA, pursuant to Section 104 of CERCLA, except with written approval of U.S. EPA, and consistent with all statutory and regulatory requirements;
2. There shall be no consumptive, extractive, or other use of the groundwater underlying the Site that could cause exposure of humans or animals to the groundwater underlying the Site. In addition, there shall be no installation of drinking water production wells on the Site, except as approved in writing by U.S. EPA;

R97-114214

- 3. There shall be no residential, commercial, or agricultural use of the landfill, including, but not limited to, any on-site excavation, landfilling, mining, invasive construction, and drilling, except as approved in writing by U.S. EPA;
- 4. There shall be no tampering with, or removal of, the containment or monitoring systems that remain on the Site as a result of implementation of any response action by U.S. EPA, or any party acting as agent for U.S. EPA, and which is selected and/or undertaken by U.S. EPA pursuant to Section 104 of CERCLA;
- 5. There shall be no activities that cause destruction of vegetation on the landfill or otherwise could result in degradation of the remedial components; and
- 6. There shall be no ignition sources on the landfill except as approved, in writing by U.S. EPA.

The obligation to implement and maintain the above restrictions shall run with that portion of the land that is described as the Site and shall remain in effect until such time as U.S. EPA provides to the landowner a written certification stating the above restrictions are no longer necessary.

IN WITNESS WHEREOF, has caused these Deed Restrictions to be executed this 5th day of August 1997.

Respondent Landowner:

[Handwritten Signature]

Address

FOREST PRESERVE DISTRICT OF DUPAGE COUNTY

185 Spring Ave., Glen Ellyn, IL 60137

STATE OF ILLINOIS)
)
COUNTY OF DUPAGE)

ss:

Before me, the undersigned, a Notary Public in and for said County and State, this 5th day of AUGUST 1997, personally appeared _____, and acknowledged this instrument

[Handwritten Signature]
Notary Public

My commission expires _____

~~~~~  
 "OFFICIAL SEAL"  
 Jerome C. Hartwig  
 Notary Public, State of Illinois  
 My Commission Expires 02/29/00  
 ~~~~~

R97-114214

Tel. (630) 293-8900

Fax (630) 293-8902

Steinbrecher Land Surveyors, Inc.

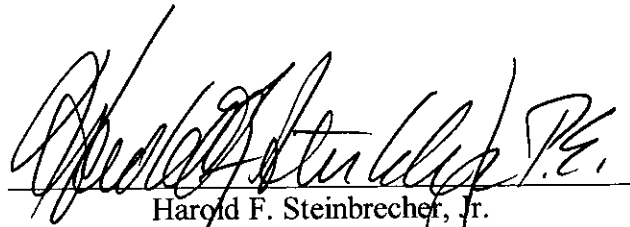
Professional Land Surveying and Professional Civil Engineering

141 S. Neltnor Blvd., West Chicago, IL 60185-2844

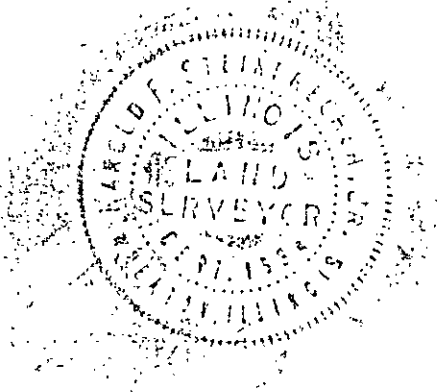
STATE OF ILLINOIS)
(ss.
COUNTY OF DUPAGE)

This is to certify that I, Harold F. Steinbrecher, Jr., a Professional Land Surveyor, have prepared a certain legal description of a certain tract shown on a map prepared by Montgomery Watson, drawing 1252008/04090040, and have related same to government survey lines by actual field measurement.

West Chicago, IL., July 23, 1997



Harold F. Steinbrecher, Jr.
Professional Land Surveyor 1594



R97-114214

UNOFFICIAL COPY

DECLARATION OF DEED RESTRICTIONS AND RESTRICTIVE COVENANTS UPON REAL ESTATE
 APPENDIX B ADMINISTRATION ORDER BY COMPTON, DOCKET NO. V-19-30-0341
 BLACKWELL FOREST PRESERVE/LANDWELL DELINEATION
 DU PAGE COUNTY LANDFILL/BLACKWELL FOREST PRESERVE

1252008
 03080040 DT
 MONTGOMERY
 WATSON

1 of 1
 1252008
 03080040 DT
 MONTGOMERY
 WATSON

1252008 0409003-01

LEGEND

- APPROXIMATE LIMITS OF FILL
- LIMITS OF SURFACE BASED ON GEOMETRICAL SURVEY AND SURVEYING
- PERMITS OF AREA OBTAINED BY THE DEED RESTRICTION
- CURVE TURNS COORDINATE LOCATION

NOTES

- BASE MAP DERIVED FROM AERIAL SURVEY TOPOGRAPHIC MAP BY AERO-MATIC ENGINEERING PROJECT NO. 108221, APRIL 3 AND 5, 1962.
- CONTOUR INTERVAL IS TWO FEET. ELEVATIONS ARE BASED ON MEAN SEA LEVEL DATUM.
- ESTABLISHED DRAINAGE BASINS BY SUBSTITUTION BY THE FOREST PRESERVE DISTRICT OF DU PAGE COUNTY.

REDUCED DRAWING SIZE

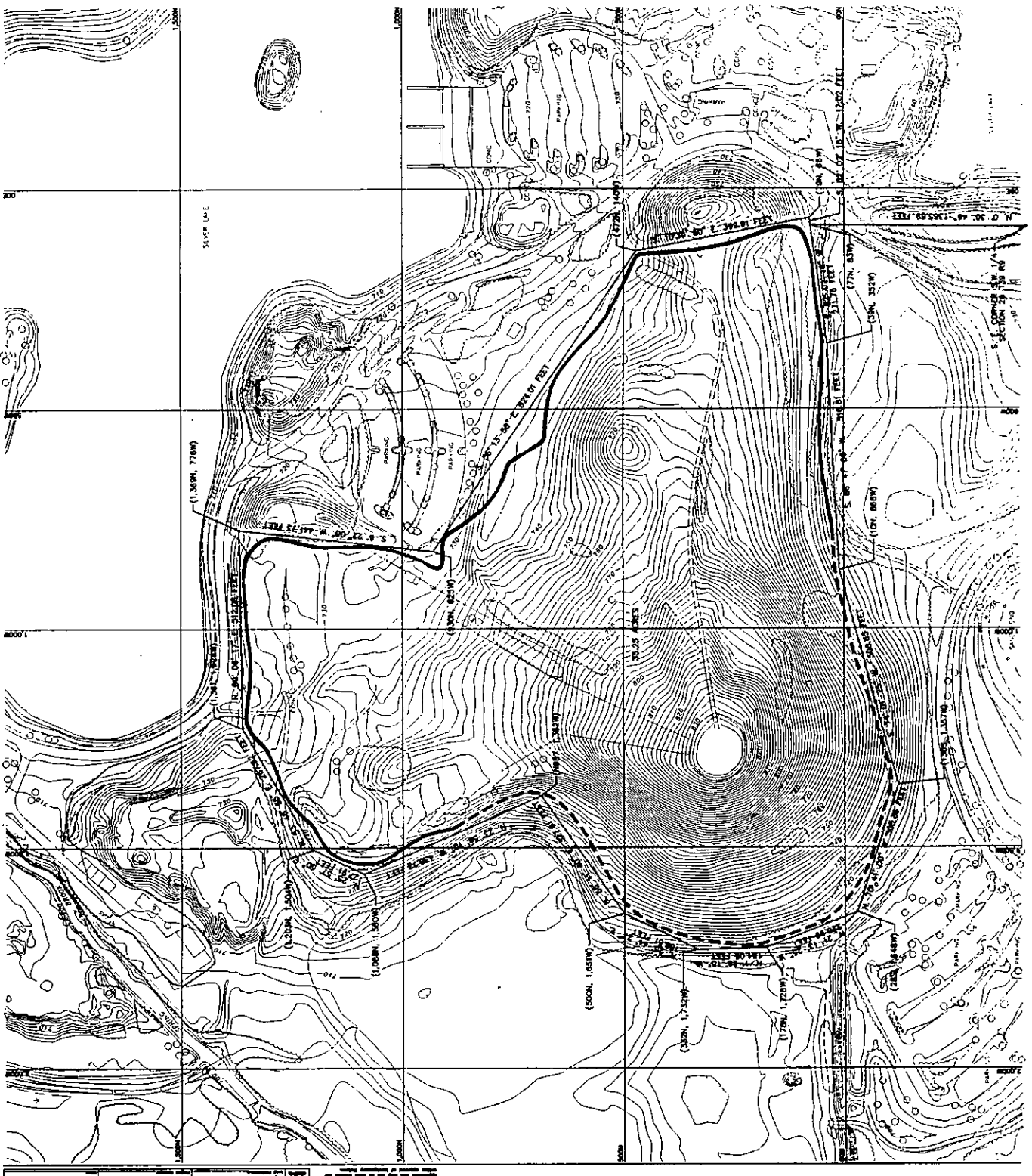
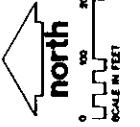
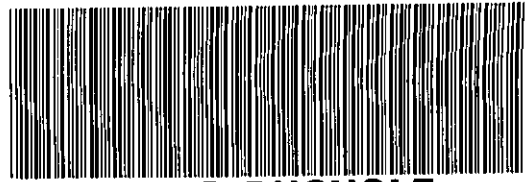


FIGURE 1



FRED BUCHOLZ ✓

DUPAGE COUNTY RECORDER

MAY 14, 2008

10:56 AM

OTHER

04-26-302-002

008 PAGES

R2008-079696

A DECLARATION OF DEED RESTRICTION AND RESTRICTIVE COVENANT
(DEED RESTRICTION) UPON REAL ESTATE TO THE DU PAGE COUNTY OF
DEEDS IN CONNECTION WITH THE DU PAGE COUNTY LANDFILL/
BLACKWELL FOREST PRESERVE PROPERTY LOCATED WITHIN THE
BLACKWELL FOREST PRESERVE.

VACANT FOREST PRESERVE DISTRICT WARRENVILLE

PIN # 04-26-302-002

04-26-302-005

04-26-302-006

04-26-302-007

**DECLARATION OF DEED RESTRICTION AND
RESTRICTIVE COVENANT UPON REAL ESTATE**

The Forest Preserve District of DuPage County, owner of the real estate described below, hereby imposes restriction on two tracts of land within the Blackwell Forest Preserve, in Section 26, Township 39 North, Range 9 East, DuPage County, Illinois:

TRACT 1

THAT PART OF THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 39 NORTH, RANGE 9 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER; THENCE NORTH 00 DEGREES 10 MINUTES 13 SECONDS WEST ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER 1365.68 FEET (NORTH 00 DEGREES 30 MINUTES 46 SECONDS WEST 1365.89 FEET RECORD) TO THE SOUTH LINE OF THE EXISTING TRACT FOR DEED RESTRICTIONS AND RESTRICTIVE COVENANTS RECORDED AUGUST 5, 1997 AS DOCUMENT NUMBER R97-114214; THENCE WESTERLY ALONG THE SOUTH LINE OF SAID EXISTING TRACT, THE FOLLOWING THREE COURSES: 1) SOUTH 82 DEGREES 23 MINUTES 40 SECONDS WEST 272.02 FEET (SOUTH 82 DEGREES 02 MINUTES 18 SECONDS WEST 271.76 FEET RECORD); 2) SOUTH 87 DEGREES 08 MINUTES 22 SECONDS WEST (SOUTH 86 DEGREES 47 MINUTES 00 SECONDS WEST RECORD) 516.81 FEET; 3) SOUTH 74 DEGREES 22 MINUTES 47 SECONDS WEST (74 DEGREES 01 MINUTE 25 SECONDS WEST RECORD) 197.24 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 03 DEGREES 11 MINUTES 48 SECONDS WEST 248.20 FEET; THENCE SOUTH 50 DEGREES 29 MINUTES 49 SECONDS WEST 429.10 FEET; THENCE NORTH 42 DEGREES 39 MINUTES 40 SECONDS WEST 421.74 FEET; THENCE NORTH 30 DEGREES 55 MINUTES 58 SECONDS EAST 235.28 FEET TO THE SOUTH LINE OF SAID EXISTING TRACT; THENCE EASTERLY ALONG THE SOUTH LINE OF SAID EXISTING TRACT, THE FOLLOWING TWO COURSES: 1) SOUTH 70 DEGREES 19 MINUTES 39 SECONDS EAST (SOUTH 70 DEGREES 41 MINUTES 00 SECONDS EAST RECORD) 222.89 FEET; 2) NORTH 74 DEGREES 22 MINUTES 47 SECONDS EAST (NORTH 74 DEGREES 01 MINUTE 25 SECONDS EAST RECORD) 311.41 FEET TO THE POINT OF BEGINNING, IN WINFIELD TOWNSHIP, DU PAGE COUNTY, ILLINOIS, CONTAINING 4.54 ACRES, MORE OR LESS.

TRACT 2

THAT PART OF THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 39 NORTH, RANGE 9 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER; THENCE NORTH 00 DEGREES 10 MINUTES 13 SECONDS WEST ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER 1365.68 FEET (NORTH 00 DEGREES 30 MINUTES 46 SECONDS WEST 1365.89

FEET RECORD) TO THE SOUTH LINE OF THE EXISTING TRACT FOR DEED RESTRICTIONS AND RESTRICTIVE COVENANTS RECORDED AUGUST 5, 1997 AS DOCUMENT NUMBER R97-114214; THENCE WESTERLY AND NORTHWESTERLY ALONG THE SOUTH AND WEST LINES OF SAID EXISTING TRACT, THE FOLLOWING FIVE COURSES: 1) SOUTH 82 DEGREES 23 MINUTES 40 SECONDS WEST 272.02 FEET (SOUTH 82 DEGREES 02 MINUTES 18 SECONDS WEST 271.76 FEET RECORD); 2) SOUTH 87 DEGREES 08 MINUTES 22 SECONDS WEST (SOUTH 86 DEGREES 47 MINUTES 00 SECONDS WEST RECORD) 516.81 FEET; 3) SOUTH 74 DEGREES 22 MINUTES 47 SECONDS WEST (SOUTH 74 DEGREES 01 MINUTE 25 SECONDS WEST RECORD) 508.65 FEET; 4) NORTH 70 DEGREES 19 MINUTES 39 SECONDS WEST (NORTH 70 DEGREES 41 MINUTES 00 SECONDS WEST RECORD) 308.36 FEET; 5) NORTH 20 DEGREES 52 MINUTES 03 SECONDS WEST (NORTH 21 DEGREES 13 MINUTES 25 SECONDS WEST RECORD) 220.99 FEET TO THE POINT OF BEGINNING; THENCE NORTH 06 DEGREES 30 MINUTES 37 SECONDS WEST 158.95 FEET; THENCE NORTH 09 DEGREES 36 MINUTES 20 SECONDS WEST 267.40 FEET; THENCE NORTH 87 DEGREES 27 MINUTES 41 SECONDS EAST 307.66 FEET TO THE WEST LINE OF SAID EXISTING TRACT; THENCE SOUTHERLY ALONG THE WEST LINE OF SAID EXISTING TRACT THE FOLLOWING THREE COURSES: 1) SOUTH 55 DEGREES 33 MINUTES 01 SECOND WEST (SOUTH 55 DEGREES 11 MINUTES 40 SECONDS WEST RECORD) 200.96 FEET; 2) SOUTH 26 DEGREES 05 MINUTES 48 SECONDS WEST (SOUTH 25 DEGREES 44 MINUTES 27 SECONDS WEST RECORD) 186.51 FEET; 3) SOUTH 01 DEGREE 07 MINUTES 54 SECONDS EAST (SOUTH 01 DEGREE 29 MINUTES 15 SECONDS EAST RECORD) 154.05 FEET TO THE POINT OF BEGINNING, IN WINFIELD TOWNSHIP, DU PAGE COUNTY, ILLINOIS, CONTAINING 0.81 ACRES, MORE OR LESS.

As depicted in the attached map prepared by MWH Americas, Inc., Figure 1.

The following restriction is imposed upon the two tracts of land described above and depicted within Figure 1.

1. There shall be no consumptive, extractive, or other use of the groundwater underlying these two tracts of land that would cause exposure to humans or animals to the groundwater underlying these two tracts of land. In addition, there shall be no installation of drinking water production wells on the Site, except as approved in writing by the United States Environmental Protection Agency (U.S. EPA).

The obligation to implement and maintain the above restriction shall run with these two tracts of land that is described above and shall remain in effect until such time as U.S. EPA provides to the landowner a written certification stating the above restriction is no longer necessary.

IN WITNESS WHEREOF, has caused this Deed Restriction to be executed this 17th day of MAY 2008.

Respondent Landowner:

Joseph R. Benedict
Joseph R. Benedict
Director/Environmental Services
Forest Preserve District of DuPage County
3 South 580 Naperville Road
Wheaton, Illinois 60187

STATE OF ILLINOIS)
)
 COUNTY OF DUPAGE) ss:

Before me, the undersigned, a Notary Public in and for said County and State, this 14 day of May 2008, personally appeared and acknowledged this instrument.

Linda J. Klett

Notary Public
 My commission expires:
07/28/2009

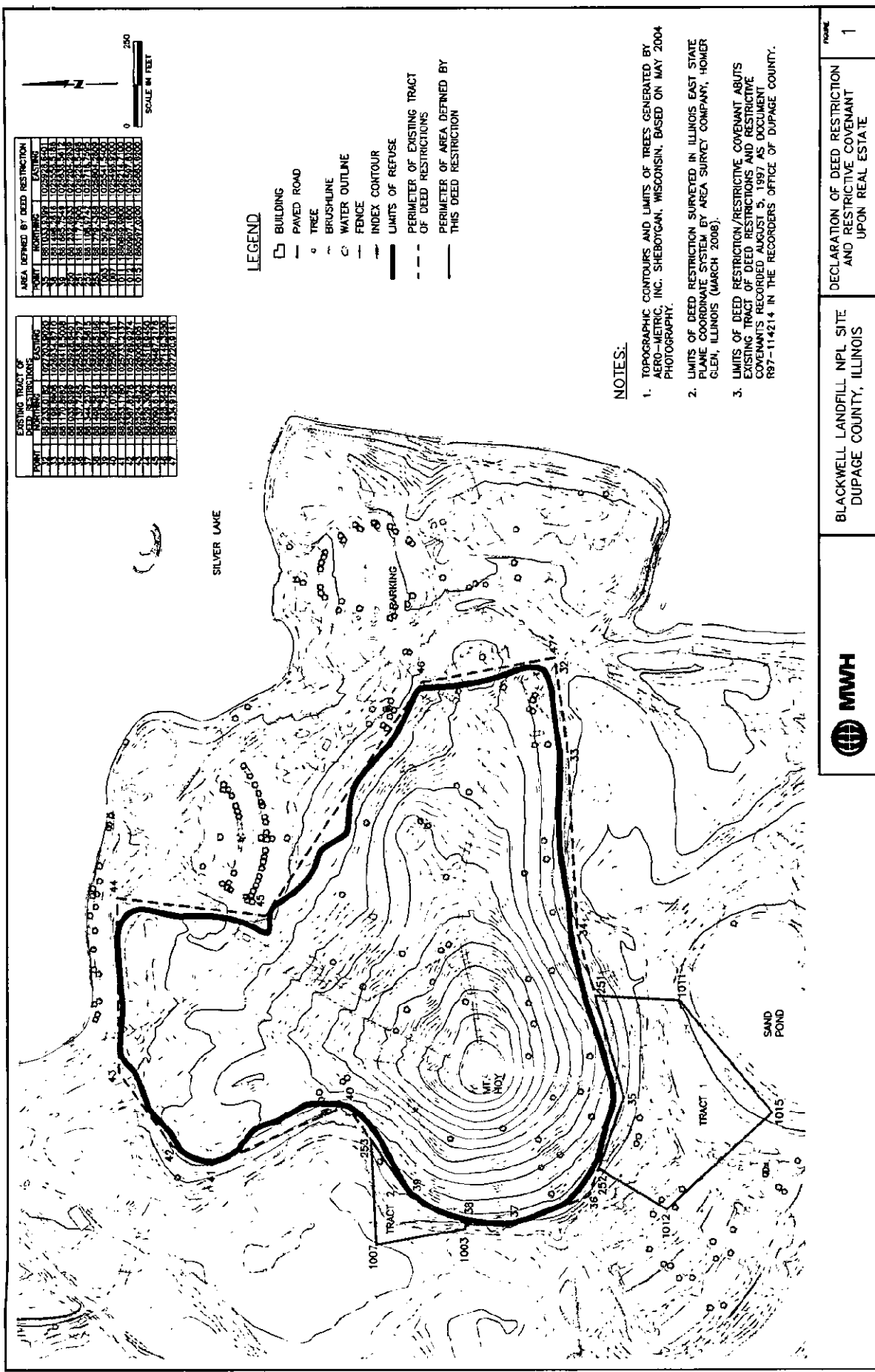



TRACT 1

THAT PART OF THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 39 NORTH, RANGE 9 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER; THENCE NORTH 00 DEGREES 10 MINUTES 13 SECONDS WEST ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER 1365.68 FEET (NORTH 00 DEGREES 30 MINUTES 46 SECONDS WEST 1365.89 FEET RECORD) TO THE SOUTH LINE OF THE EXISTING TRACT FOR DEED RESTRICTIONS AND RESTRICTIVE COVENANTS RECORDED AUGUST 5, 1997 AS DOCUMENT NUMBER R97-114214; THENCE WESTERLY ALONG THE SOUTH LINE OF SAID EXISTING TRACT, THE FOLLOWING THREE COURSES: 1) SOUTH 82 DEGREES 23 MINUTES 40 SECONDS WEST 272.02 FEET (SOUTH 82 DEGREES 02 MINUTES 18 SECONDS WEST 271.76 FEET RECORD); 2) SOUTH 87 DEGREES 08 MINUTES 22 SECONDS WEST (SOUTH 86 DEGREES 47 MINUTES 00 SECONDS WEST RECORD) 516.81 FEET; 3) SOUTH 74 DEGREES 22 MINUTES 47 SECONDS WEST (74 DEGREES 01 MINUTE 25 SECONDS WEST RECORD) 197.24 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 03 DEGREES 11 MINUTES 48 SECONDS WEST 248.20 FEET; THENCE SOUTH 50 DEGREES 29 MINUTES 49 SECONDS WEST 429.10 FEET; THENCE NORTH 42 DEGREES 39 MINUTES 40 SECONDS WEST 421.74 FEET; THENCE NORTH 30 DEGREES 55 MINUTES 58 SECONDS EAST 235.28 FEET TO THE SOUTH LINE OF SAID EXISTING TRACT; THENCE EASTERLY ALONG THE SOUTH LINE OF SAID EXISTING TRACT, THE FOLLOWING TWO COURSES: 1) SOUTH 70 DEGREES 19 MINUTES 39 SECONDS EAST (SOUTH 70 DEGREES 41 MINUTES 00 SECONDS EAST RECORD) 222.89 FEET; 2) NORTH 74 DEGREES 22 MINUTES 47 SECONDS EAST (NORTH 74 DEGREES 01 MINUTE 25 SECONDS EAST RECORD) 311.41 FEET TO THE POINT OF BEGINNING, IN WINFIELD TOWNSHIP, DU PAGE COUNTY, ILLINOIS, CONTAINING 4.54 ACRES, MORE OR LESS.

TRACT 2

THAT PART OF THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 39 NORTH, RANGE 9 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER; THENCE NORTH 00 DEGREES 10 MINUTES 13 SECONDS WEST ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER 1365.68 FEET (NORTH 00 DEGREES 30 MINUTES 46 SECONDS WEST 1365.89 FEET RECORD) TO THE SOUTH LINE OF THE EXISTING TRACT FOR DEED RESTRICTIONS AND RESTRICTIVE COVENANTS RECORDED AUGUST 5, 1997 AS DOCUMENT NUMBER R97-114214; THENCE WESTERLY AND NORTHWESTERLY ALONG THE SOUTH AND WEST LINES OF SAID EXISTING TRACT, THE FOLLOWING FIVE COURSES: 1) SOUTH 82 DEGREES 23 MINUTES 40 SECONDS WEST 272.02 FEET (SOUTH 82 DEGREES 02 MINUTES 18 SECONDS WEST 271.76 FEET RECORD); 2) SOUTH 87 DEGREES 08 MINUTES 22 SECONDS WEST (SOUTH 86 DEGREES 47 MINUTES 00 SECONDS WEST RECORD) 516.81 FEET; 3) SOUTH 74 DEGREES 22 MINUTES 47 SECONDS WEST (SOUTH 74 DEGREES 01 MINUTE 25 SECONDS WEST RECORD) 508.65 FEET; 4) NORTH 70 DEGREES 19 MINUTES 39 SECONDS WEST (NORTH 70 DEGREES 41 MINUTES 00 SECONDS WEST RECORD) 308.36 FEET; 5) NORTH 20 DEGREES 52 MINUTES 03 SECONDS WEST (NORTH 21 DEGREES 13 MINUTES 25 SECONDS WEST RECORD) 220.99 FEET TO THE POINT OF BEGINNING; THENCE NORTH 06 DEGREES 30 MINUTES 37 SECONDS WEST 158.95 FEET; THENCE NORTH 09 DEGREES 36 MINUTES 20 SECONDS WEST 267.40 FEET; THENCE NORTH 87 DEGREES 27 MINUTES 41 SECONDS EAST 307.66 FEET TO THE WEST LINE OF SAID EXISTING TRACT; THENCE SOUTHERLY ALONG THE WEST LINE OF SAID EXISTING TRACT THE FOLLOWING THREE COURSES: 1) SOUTH 55 DEGREES 33 MINUTES 01 SECOND WEST (SOUTH 55 DEGREES 11 MINUTES 40 SECONDS WEST RECORD) 200.96 FEET; 2) SOUTH 26 DEGREES 05 MINUTES 48 SECONDS WEST (SOUTH 25 DEGREES 44 MINUTES 27 SECONDS WEST RECORD) 186.51 FEET; 3) SOUTH 01 DEGREE 07 MINUTES 54 SECONDS EAST (SOUTH 01 DEGREE 29 MINUTES 15 SECONDS EAST RECORD) 154.05 FEET TO THE POINT OF BEGINNING, IN WINFIELD TOWNSHIP, DU PAGE COUNTY, ILLINOIS, CONTAINING 0.81 ACRES, MORE OR LESS.





 BLACKWELL LANDFILL NPL SITE
 DUPAGE COUNTY, ILLINOIS

DECLARATION OF DEED RESTRICTION
 AND RESTRICTIVE COVENANT
 UPON REAL ESTATE

APPENDIX B
Title Commitment



ALTA COMMITMENT FOR TITLE INSURANCE

Issued By:



CHICAGO TITLE
INSURANCE COMPANY

Commitment Number:

CCHI1802484LD

NOTICE

IMPORTANT - READ CAREFULLY: THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACTIONAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY'S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON.

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and the Commitment Conditions, Chicago Title Insurance Company, a Florida corporation (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured.

If all of the Schedule B, Part I-Requirements have not been met within one hundred eighty (180) days after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

Chicago Title Insurance Company

By:

President

Attest:

Secretary

Countersigned By:

Authorized Officer or Agent

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



Transaction Identification Data for reference only:

ORIGINATING OFFICE:	FOR SETTLEMENT INQUIRIES, CONTACT:
Chicago Title Insurance Company 10 South LaSalle Street, Suite 3100 Chicago, IL 60603 Main Phone: (312)223-4627 Email: chicagocommercial@ctt.com	Chicago Title and Trust Company 10 South LaSalle Street, Suite 3100 Chicago, IL 60603 Main Phone: (312)223-4627 Main Fax: (312)223-3018

Order Number: CCHI1802484LD**Property Ref.:** vacant property, West Chicago, IL 60185**SCHEDULE A**

1. Commitment Date: January 7, 2020
2. Policy to be issued:
 - (a) ALTA Owner's Policy 2006
 Proposed Insured: Purchaser with contractual rights under a purchase agreement with the vested owner identified at Item 4 below
 Proposed Policy Amount: \$10,000.00
 - (b) ALTA Loan Policy 2006
 Proposed Insured: Lender with a contractual obligation under a loan agreement with the Proposed Insured for an Owner's Policy
 Proposed Policy Amount: \$10,000.00
3. The estate or interest in the Land described or referred to in this Commitment is:
 Fee Simple
4. The Title is, at the Commitment Date, vested in:
 Forest Preserve District of DuPage County, an Illinois municipal corporation
5. The Land is described as follows:
 SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

END OF SCHEDULE A

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



EXHIBIT "A"

Legal Description

Parcel 1:

That part of the Northwest quarter of Section 26 Township 39 Range 9 East, described by beginning at a point on the north line of said Northwest $\frac{1}{4}$ that is 165.0 feet west measured along said north line from the Northeast corner of said Northwest $\frac{1}{4}$ (said point being the Northwest corner of Charles Hanson's Survey recorded 8-8-53, as document 691777) and running thence South 0 degrees 15 minutes east parallel with the East line of said Northwest $\frac{1}{4}$ (being along the West line of said Hanson's Survey) 208.0 feet to the South line of said survey; thence North 89 degrees 02 minutes east along said South line 165.0 feet to the East line of said Northwest $\frac{1}{4}$ of Section 26; thence South 0 degrees 15 minutes East along the said East line 1782.49 feet to a point 660.0 feet North of the South line of said Northwest $\frac{1}{4}$ (being the Northeast corner of Lot 10 of Byron Acres, a subdivision recorded 5-23-60 as document 965785; thence South 88 degrees 51 minutes West along the North line of said Lot 10, 330.0 feet to the West line of said lot; thence South 0 degrees 15 minutes East along said West line of said Lot 10, 660.0 feet to the South line of said Northwest $\frac{1}{4}$; thence South 88 degrees 51 minutes West along said South line, 1695.25 feet to the center thread of Spring Brook; thence North 45 degrees 16 $\frac{1}{2}$ feet East along said center thread of Spring Brook, 538.67 feet; thence North 51 degrees 40 $\frac{1}{2}$ minutes East along said center thread, 200 feet thence North 35 Degrees 27 minutes East along said center thread, 103.85 feet; thence North 38 degrees 15 $\frac{1}{2}$ feet East along said center thread, 121.90 feet to the East line of a private road; thence North 0 degrees 19 minutes West along said East line, 2005.35 feet to the North line of said Northwest $\frac{1}{4}$ thence North 89 degrees 02 minutes East along said North line, 1163.9 feet to the point of beginning, in Winfield Township, DuPage County, Illinois.

Parcel 2:

Lot 10 in Byron Acres, a subdivision of part of Section 26, Township 39 North, Range 9, East of the Third Principal Meridian, according to the plat thereof recorded May 23, 1960 as document 965785, in DuPage County, Illinois.

Parcel 3:

That part of Section 26, Township 39 North, Range 9, East of the Third Principal Meridian, described by beginning 340.4 feet South of the center of said section at the Southwest corner of Lot 9 in Byron Acres, a subdivision in said Section 26, recorded May 23, 1960 as document 965785 and running thence South 89 degrees 59 minutes East on the South line of said subdivision, 1843.40 feet to the Southeast corner of said subdivision, (said point being in the center line of Winfield Road); thence South 12 degrees 16 minutes East on said center line of Winfield Road, 420.4 feet; thence South 81 degrees 46 minutes West 199.28 feet; thence South 0 degrees 05 minutes West, 157.0 feet; thence South 83 degrees 08 minutes

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



EXHIBIT "A"

Legal Description

West 98.7 feet; thence South 36 degrees 43 minutes West, 219.3 feet; thence South 1 degree 14 minutes West, 96.0 feet; thence South 89 degrees 11 minutes East, 532.68 feet to the center line of said Winfield Road; thence South 12 degrees 16 minutes East on said center line, 6.48 feet to an angle in said center line; thence South 2 degrees 20 minutes West on said center line 974.19 feet to a point in the South line of the right of way of the Chicago, Aurora and Elgin Railroad; thence South 63 degrees 26 minutes West on said South right of way line, 484.31 feet to the North line of lands formerly owned by Thomas Armour; thence North 89 degrees 59 minutes West on said North line to the quarter section line, 1108.8 feet to the division line; thence South 89 degrees 30 minutes West on the division line, 1332.2 feet to the division corner; thence North 89 degrees 49 minutes West 1263.65 feet to the Southeast corner of Hoy's Plat of Survey of part of the Northwest quarter of the Southwest quarter of said Section 26, according to the plat thereof recorded March 2, 1953 as document 675263 ; thence North 11 degrees 09 minutes East on the East line of Lot 4 in said survey 336.66 feet to the Northeast corner of said Lot 4 thence North 9 degrees 53 minutes on the East line of Lot 3 in said survey, 183.44 feet, thence North 13 degrees 32 minutes East on the East line of said Lot 3, 165.65 feet to the Northeast corner of said Lot 3; thence North 34 degrees 28 minutes East on the East line of Lot 2 in said survey, 394.9 feet to the Northeast corner of said Lot 2; thence North 44 degrees 45 minutes East on the East line of Lot 1 in said survey, 469.25 feet to the East and West quarter section line, of said section; thence North 89 degrees 48 minutes East on said quarter section line, 645.68 feet to the Northwest corner of Lot 10 in said Byron Acres; thence South 0 degrees 34 minutes West on the West line of said Lot 10, 687.15 feet to the South west corner of said Lot 10; thence North 89 degrees 50 minutes East on the South line of said Lot 10, 1331.28 feet to the Southeast corner of said Lot 10, thence North 0 degrees 50 minutes East on the East line of said Lot 10, 326.6 feet to the Place of beginning, in DuPage County, Illinois.

Except that part described as a strip of land 100 in width, being across the Southeast corner of the Mary A. Hoy Farm on the Southeast quarter of the Southeast quarter of Section 26, Township 39 North, Range 9, East of the Third Principal Meridian, the center line of which is described as follows:

Commencing on the boundary line between lands owned by said Mary A. Hoy and H.G. Savage, at a point 198 feet North and 1478 feet East of the Southwest corner of said quarter section; thence North 64 degrees 30 minutes East, 579 ½ feet to the West line of the Warrenville and Winfield Railroad Station Wagon Road, at a point 260 feet North of the Northeast corner of land owned by said H.G. Savage; thence on same straight line to the center of the Warrenville Wagon Road, being the premises conveyed to the Chicago, Aurora and Elgin Railway Company, a corporation of Illinois, by deed recorded May 3, 1900 as document 71379 in DuPage County, Illinois.

Parcel 4:

Lot 3 of Von Lanken Assessment Plat of part of Section 26, Township 39 North, Range 9, East of the Third Principal Meridian, in DuPage County, Illinois.

Parcel 5:

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



EXHIBIT "A"

Legal Description

That part of Sections 26 and 35, Township 39 North, Range 9, East of the Third Principal Meridian, described by beginning at an iron pipe stake on the quarter section line 198.0 feet North of the quarter section corner common to said Sections, and running thence North 88 degrees 55 minutes East along an old occupation line which is by record parallel with the South line of the South East quarter of said Section 26, for a distance of 244.75 feet to an iron pipe stake on the North Westerly line of the right of way of Federal Aid Highway Route 131, also known as Butterfield Road, State Highway Route 55; thence South Westerly along said North Westerly line, being on a curve to the left having a radius of 3537.87 feet for a distance of 134.98 feet to the point of tangency of said curve; thence continuing South Westerly along said North Westerly right of way line being along the tangent to the aforesaid curve for a distance of 298.6 feet; thence continuing South Westerly along said North Westerly right of way line being on a curve to the right having a radius of 6266.26 feet for a distance of 873.98 feet to an old fence line; thence North 48 degrees 14 minutes West along said old fence line, said line being the North Easterly line of River and Grove Addition to Warrenville, for a distance of 881.7 feet to an old iron pipe stake in an old fence corner, which is by deed on the South line of said Section 26; thence North 0 degrees 10 minutes West along an old fence line which is by deed parallel with the West line of Section 26, 1310.0 feet to an old iron pipe stake in fence corner; thence North 88 degrees 30 minutes East parallel with the South line of said Section 26, 1405.8 feet to a stone at the North East corner of the South East quarter of the South West quarter (as monumented) of said Section 26; thence South 0 degrees 57 minutes East along the East line of said South West quarter of said Section 26, 1108.1 feet to the place of beginning, in DuPage County, Illinois. Except any part taken for road purposes and those parts conveyed to the State of Illinois Department of Transportation in the deeds recorded as document R2011-050187 and R2011-050188.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.

AMERICAN
LAND TITLE
ASSOCIATION



**SCHEDULE B, PART I
REQUIREMENTS**

All of the following Requirements must be met:

1. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.
2. Pay the agreed amount for the estate or interest to be insured.
3. Pay the premiums, fees, and charges for the Policy to the Company.
4. Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.
5. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.
6. Be advised that the "good funds" of the title insurance act (215 ILCS 155/26) became effective 1-1-2010. This act places limitations upon the settlement agent's ability to accept certain types of deposits into escrow. Please contact your local Chicago Title office regarding the application of this new law to your transaction.
7. Effective June 1, 2009, pursuant to Public Act 95-988, satisfactory evidence of identification must be presented for the notarization of any and all documents notarized by an Illinois notary public. Satisfactory identification documents are documents that are valid at the time of the notarial act; are issued by a state or federal government agency; bear the photographic image of the individual's face; and bear the individual's signature.
8. **The Proposed Policy Amount(s) must be increased to the full value of the estate or interest being insured, and any additional premium must be paid at that time. An Owner's Policy should reflect the purchase price or full value of the Land. A Loan Policy should reflect the loan amount or value of the property as collateral. Proposed Policy Amount(s) will be revised and premiums charged consistent therewith when the final amounts are approved.**

END OF SCHEDULE B, PART I

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



SCHEDULE B, PART II EXCEPTIONS

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company:

General Exceptions

1. **Rights or claims of parties in possession not shown by Public Records.**
2. **Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the Land.**
3. **Easements, or claims of easements, not shown by the Public Records.**
4. **Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the Public Records.**
5. **Taxes or special assessments which are not shown as existing liens by the Public Records.**
6. **We should be furnished a properly executed ALTA statement and, unless the land insured is a condominium unit, a survey if available. Matters disclosed by the above documentation will be shown specifically**
7. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I—Requirements are met.
- C 8. Note for additional information: the County Recorder requires that any documents presented for recording contain the following information:
 - A. The name and address of the party who prepared the document;
 - B. The name and address of the party to whom the document should be mailed after recording;
 - C. All permanent real estate tax index numbers of any property legally described in the document;
 - D. The address of any property legally described in the document;
 - E. All deeds should contain the address of the grantee and should also note the name and address of the party to whom the tax bills should be sent.
 - F. Any deeds conveying unsubdivided land, or, portions of subdivided and, may need to be accompanied by a properly executed "plat act affidavit."

In addition, please note that the certain municipalities located in the County have enacted transfer tax ordinances. To record a conveyance of land located in these municipalities, the requirements of the transfer tax ordinances must be met. A conveyance of property in these cities may need to have the

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



**SCHEDULE B, PART II
EXCEPTIONS**
(continued)

appropriate transfer tax stamps affixed before it can be recorded.

This exception will not appear on the policy when issued.

- P 9. Taxes for the years 2019 and 2020.
Taxes for the years 2019 and 2020 are not yet due and payable.

Taxes for the year 2018 are marked exempt..

Permanent index numbers:

04-26-103-001 (Affects part of the Land to be described and other property)
04-26-103-002 (Affects part of the Land to be described and other property)
04-26-302-001 (Affects part of the Land to be described and other property)
04-26-302-002 (Affects part of the Land to be described and other property)
04-26-302-005 (Affects part of the Land to be described and other property)
04-26-302-006 (Affects part of the Land to be described and other property)
04-26-302-007 (Affects part of the Land to be described and other property)
04-26-400-004 (Affects part of the Land to be described and other property)

The general taxes as shown above are marked exempt on the Collector's Warrants. Unless satisfactory evidence is submitted to substantiate said exemption, or policy, if and when issued, will be subject to said taxes.

- E 10. Please be advised that our search did not disclose any open mortgages of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.
- B 11. Existing unrecorded leases and all rights thereunder of the lessees and of any person or party claiming by, through or under the lessees.
- A 12. The Company should be furnished a statement that there is no property manager employed to manage the Land, or, in the alternative, a final lien waiver from any such property manager.
- H 13. The Land described in Schedule A either is unsubdivided property or constitutes part of a subdivided lot. As a result, a Plat Act Affidavit should accompany any conveyance to be recorded. In the alternative, compliance should be had with the provisions of the Plat Act (765 ILCS 205/1 et seq.)
- N 14. The legal description provided in Schedule A is for convenience only. An ALTA survey that more particularly describes the property in question should be provided and this commitment is subject to further exceptions, if any, as may be deemed necessary.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



**SCHEDULE B, PART II
EXCEPTIONS**
(continued)

- F 15. For each policy to be issued as identified in Schedule A, Item 2; the Company shall not be liable under this commitment until it receives a designation for a Proposed Insured, acceptable to the Company. As provided in Commitment Condition 4, the Company may amend this commitment to add, among other things, additional exceptions or requirements after the designation of the Proposed Insured.
- Q 16. Since a governmental entity holds title to the land, any conveyance or mortgage of the land is subject to the limitations and conditions imposed by law. Proof of compliance with the same should be furnished.
- R 17. Health restrictions contained in the certificate appended to the Plat of Byron Acres, as follows:

Adequate facilities for sewage disposal and water supply must be assured for each lot. Plans for those facilities must be approved by the DuPage County Building Department before a building permit will be issued.

(Affects Parcel 2)
- S 18. Terms and provisions of the Declaration of deed restrictions and restrictive covenants upon real estate to the DuPage County Recorded of Deeds as required by administrative order by consent in connection with the DuPage County landfill/ Blackwell Forest Preserve Property located within the Blackwell Forest Preserve, recorded August 5, 1997 as document R97-114214, affecting the Land therein described.

Terms and provisions of the notice recorded May 14, 1999 as document R1999-0110546.

(Affects Parcels 2, 3, 4 and part of 5)
- T 19. Terms and provisions of the Declaration of deed restrictions and restrictive covenants upon real estate to the DuPage County Recorded of Deeds as required by administrative order by consent in connection with the DuPage County landfill/ Blackwell Forest Preserve Property located within the Blackwell Forest Preserve, recorded May 14, 2008 as document R2008-079696, affecting the Land therein described.

(Affects Parcels 3, 4 and part of 5)
- W 20. Nothing should be construed as insuring access to the premises in question by means of the easement recorded as document R65-40676 nor by any other means.

(Affects Parcel 4)
- X 21. Public utility easement as reserved in the certificate appended to Von Lancken Assessment Plat.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



**SCHEDULE B, PART II
EXCEPTIONS**
(continued)

(Affects Parcel 4)

- Y 22. Easement for private drive 20 feet along the North lines of Lots 1 and 2, for the benefit of premises in question, as shown on Von Lanken Assessment Plat.
- (Affects Parcel 4)
- I 23. Rights of Way for drainage tiles, ditches, feeders, laterals and underground pipes, if any.
- J 24. Rights of the public, the State of Illinois and the municipality in and to that part of the Land, if any, taken or used for road purposes.
- O 25. Rights of the public and quasi-public utilities, if any, in the Land for maintenance therein of poles, conduits, sewers and other facilities.
- U 26. Rights, easements, interest or title of the Railroad Company hereinafter set forth, as to any portion of said Land lying within the lines of the right-of-way granted to said Railroad, Chicago, Aurora, and Elgin Railway Company, affects Parcel 3.
- V 27. Notwithstanding Insuring Provisions , this policy does not insure a legal right of access to and from said Land.
- L 28. Note for information (Endorsement Requests):
- All endorsement requests should be made prior to closing to allow ample time for the company to examine required documentation.
- Note: before any endorsements can be approved, we should be informed as to the land use and as to what type of structure is on the land.
- (This note will be waived for policy)
- M 29. Informational Note:
- To schedule any closings in the Chicago Commercial Center, please call (312)223-2707.

END OF SCHEDULE B, PART II

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



**SCHEDULE B, PART II
EXCEPTIONS**
(continued)

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.

AMERICAN
LAND TITLE
ASSOCIATION



COMMITMENT CONDITIONS**1. DEFINITIONS**

- (a) "Knowledge" or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.
- (b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.
- (c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.
- (d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.
- (e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.
- (f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.
- (g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.
- (h) "Title": The estate or interest described in Schedule A.

2. If all of the Schedule B, Part I-Requirements have not been met within the time period specified in the Commitment to Issue Policy, this Commitment terminates and the Company's liability and obligation end.

3. The Company's liability and obligation is limited by and this Commitment is not valid without:

- (a) the Notice;
- (b) the Commitment to Issue Policy;
- (c) the Commitment Conditions;
- (d) Schedule A;
- (e) Schedule B, Part I-Requirements;
- (f) Schedule B, Part II-Exceptions; and
- (g) a counter-signature by the Company or its issuing agent that may be in electronic form.

4. COMPANY'S RIGHT TO AMEND

The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

5. LIMITATIONS OF LIABILITY

- (a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:
 - (i) comply with the Schedule B, Part I-Requirements;
 - (ii) eliminate, with the Company's written consent, any Schedule B, Part II-Exceptions; or
 - (iii) acquire the Title or create the Mortgage covered by this Commitment.
- (b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.
- (c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.
- (d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.
- (e) The Company shall not be liable for the content of the Transaction Identification Data, if any.
- (f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I-Requirements have been met to the satisfaction of the Company.
- (g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

6. LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT

- (a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
- (b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



(continued)

- (c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
- (d) The deletion or modification of any Schedule B, Part II-Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
- (e) Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
- (f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT

The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. PRO-FORMA POLICY

The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. ARBITRATION

The Policy contains an arbitration clause. All arbitrable matters when the Proposed Policy Amount is Two Million And No/100 Dollars (\$2,000,000.00) or less shall be arbitrated at the option of either the Company or the Proposed Insured as the exclusive remedy of the parties. A Proposed Insured may review a copy of the arbitration rules at <http://www.alta.org/arbitration>.

END OF CONDITIONS**1031 EXCHANGE SERVICES**

If your transaction involves a tax deferred exchange, we offer this service through our 1031 division, IPX1031. As the nation's largest 1031 company, IPX1031 offers guidance and expertise. Security for Exchange funds includes segregated bank accounts and a 100 million dollar Fidelity Bond. Fidelity National Title Group also provides a 50 million dollar Performance Guaranty for each Exchange. For additional information, or to set-up an Exchange, please call Scott Nathanson at (312)223-2178 or Anna Barsky at (312)223-2169.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Chicago Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Copyright American Land Title Association. All rights reserved.

The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.



APPENDIX C
Record of Decision



**EPA Superfund
Record of Decision:**

**DUPAGE COUNTY LANDFILL/BLACKWELL FOREST
PRESERVE
EPA ID: ILD980606305
OU 01
WARRENVILLE, IL
09/30/1998**

EPA 541-R98-092

SEP 30 1998

Prepared by:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Region V

Chicago, Illinois

September 1998

**Declaration
Selected Remedial Alternative
for the
DuPage County Landfill/Blackwell Forest Preserve
DuPage County, Illinois**

Site Name and Location

**DuPage County Landfill/Blackwell Forest Preserve
DuPage County, Illinois**

Statement of Basis and Purpose

This decision document presents the rationale for selecting the final site-wide remedy for the DuPage County Landfill/Blackwell Forest Preserve Site ("DuPage County Landfill" or "the Site") located in DuPage County, Illinois. This Record of Decision was completed in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), as amended by the Superfund Amendments and Reauthorization Act of 1986 ("SARA") and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"). This decision document explains the factual and legal basis for selecting the final remedy for the Site. The information supporting this remedial action decision is contained in the Administrative Record for the Site. The State of Illinois has expressed a willingness to concur with the selected remedy. This letter of concurrence will be added to the Administrative Record for this Site.

Assessment of the Site

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Record of Decision ("ROD"), may present an imminent and substantial endangerment to public health, welfare, or the environment.

Description of the Selected Remedy

The remedial action contained in this ROD will be a final Site-wide remedy. The selected remedial action addresses the major threat posed by this Site by off-site treatment and disposal of leachate and addresses the low level sources of contamination by containment of the landfill and contaminated soils, management of landfill gas and Monitored Natural Attenuation for ground water. The final remedy builds upon previously implemented response actions which include: cap improvements, installation and operation of a leachate collection system, off-site leachate treatment, and installation of a landfill gas management system. The final remedy selected for the Site incorporates both long-term operation and maintenance of these components and other response actions. Specifically, the United States Environmental Protection Agency ("U.S. EPA") has determined that the following measures should be implemented as the long-term remedy in order to fully address all threats to human health and the environment posed by contamination at the Site:

- Institutional controls in the form of future land-use and ground water use restrictions;
- Long-term cap inspection and maintenance including storm water and erosion control,
- Long-term operation and maintenance of the landfill leachate collection system with possible augmentation;
- Continued off-site treatment and disposal of landfill leachate;
- Long-term operation and maintenance of the passive landfill gas venting system with possible augmentation to active gas collection and on-site thermal treatment;

Monitored Natural Attenuation for ground water, and

- Long-term ground water, landfill gas, and leachate monitoring.

The selected remedial action, incorporating previous response actions, will address all threats posed by the Site.

Declaration of Statutory Determinations

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective. The remedy utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable, and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

Because this remedy will result in hazardous substances remaining on-site above health-based levels, a review will be conducted every five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

U.S. EPA has determined that its future response at this Site does not require any further physical construction. Therefore, the Site now qualifies for inclusion on the Construction Completion List.

Data Certification

The following information was used in determining the selected remedy and is included in the ROD:

- A description of the Contaminants of Potential Concern and their respective concentrations;
- Baseline risk represented by the Contaminants of Potential Concern;
- Cleanup levels established for Contaminants of Potential Concern and the basis for the levels,
- Current and future land use assumptions from the Baseline Risk Assessment;
- Land use that will be available at the Site as a result of the selected remedy;
- Estimated capital, operation and maintenance (O&M), and total present worth costs; discount rate; and the number of years over which the remedy cost estimate is projected; and
- Decisive factors(s) that led to selecting the remedy.

TABLE OF CONTENTS

**SUMMARY OF REMEDIAL ALTERNATIVE SELECTION
DUPAGE COUNTY LANDFILL/BLACKWELL FOREST PRESERVE**

I. SITE NAME, LOCATION AND DESCRIPTION1
II. SITE HISTORY AND ENFORCEMENT ACTIVITIES4
III. HIGHLIGHTS OF COMMUNITY PARTICIPATION8
IV. SCOPE AND ROLE OF RESPONSE ACTION WITHIN SITE STRATEGY8
V. SUMMARY OF SITE CHARACTERISTICS9
VI. SUMMARY OF SITE RISKS21
VII. DESCRIPTION OF ALTERNATIVES32
VIII. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES39
IX. THE SELECTED REMEDY59
X. STATUTORY DETERMINATIONS62
XI. RESPONSIVENESS SUMMARY68
XII. ADMINISTRATIVE RECORD.....69

DESCRIPTION OF TABLES

**DUPAGE COUNTY LANDFILL/BLACKWELL FOREST PRESERVE
DuPage County, Illinois**

Table 1 - Select VOCs and Semi-VOCs in Leachate.....13
Table 2 - Select Metals in Leachate14
Table 3 - Select Landfill Gas Results14
Table 4 - Select Inorganics in Soils15
Table 5 - Select VOCs in On-Site Ground Water16
Table 6 - Select Metals in On-Site Ground Water18
Table 7 - Contaminants of Potential Concern by Medium22
Table 8 - Health Risk Estimates29
Table 9 - Summary of Potential Chemical-Specific ARARs.....41
Table 10 - Summary of Potential Location-Specific ARARs.....43
Table 11 - Summary of Potential Action-Specific ARARs.....45

DESCRIPTION OF FIGURES

**DUPAGE COUNTY LANDFILL/BLACKWELL FOREST PRESERVE SITE
DuPage County, Illinois**

FIGURE 1 - SITE LOCATION MAP..... 2
FIGURE 2 - SITE FEATURES MAP..... 3
FIGURE 3 - PLUME MAP..... 17

DECISION SUMMARY FOR THE FINAL REMEDIAL ACTION

DUPAGE COUNTY LANDFILL/BLACKWELL FOREST PRESERVE SITE
DuPage County, Illinois
CERCLIS ID # - ILD980606305

I. SITE NAME, LOCATION AND DESCRIPTION

The DuPage County Landfill/Blackwell Forest Preserve Site ("the Site") is located approximately 6 miles southwest of downtown Wheaton, near Warrenville, in DuPage County, Illinois (see Figure 1). The Site is located in Section 226, Township 39 North, Range 9 East, DuPage County, Illinois. The Site is part of the Roy C. Blackwell Forest Preserve and is owned by the Forest Preserve District of DuPage County.

The Site is an approximately 40-acre landfill centrally located within the approximately 1200-acre Blackwell Forest Preserve. The Forest Preserve is owned and managed by the DuPage County Forest Preserve District ("FPD") and is open space containing woodlands, grasslands wetlands and lakes used by the public for recreational uses such as hiking, camping, boating, fishing and horseback riding. The boundaries that define the Site (within the greater Forest Preserve) are: on the north and east, the landfill is west of the "C" shaped Silver Lake from Spring Brook on the north to Butterfield Road on the south. The southern boundary extends along Butterfield Road to the intersection of Butterfield Road and the West Branch of the DuPage River, and then north to the intersection of the West Branch of the DuPage River and Spring Brook. The western boundary of the Site is formed by Spring Brook.

The surface topography generally slopes from northwest to southeast across the county. The maximum elevation of the Site is the 150-foot tall landfill itself (also known as Mt. Hoy). The top of the landfill is approximately 840 feet mean sea level (M.S.L.). The landfill slopes sharply south toward Sand Pond which has an elevation of 690 M.S.L. and more gently northeast toward Silver Lake at 708 M.S.L. Figure 2 is a Site Features Map.

The landfill is located within the Spring Brook watershed of the West Branch of the DuPage River drainage basin. From Spring Brook, surface water drains to the West Branch of the DuPage River and, ultimately, to the Des Plaines River.

The hydrogeologic setting varies in an east to west direction (upgradient to downgradient). East or upgradient of the landfill the following units are present, in ascending order: the bedrock aquifer, the Malden/Tiskilwa Till aquitard, and the Yorkville Till aquitard. West or downgradient of the landfill, the bedrock aquifer and the Malden/Tiskilwa Till aquitard are present along with the shallower outwash aquifer. The location of the landfill is such that it lies across the contact between the outwash aquifer and the Yorkville Till aquitard. Therefore, the outwash aquifer is not present upgradient or east of the landfill. The dolomite bedrock aquifer and the outwash aquifer are the only aquifers present and are interconnected downgradient of the Site. Ground water flows in the bedrock (or deep aquifer) are consistently in a southwesterly direction. Surface water exerts considerable control on the shallow outwash aquifer ground water flow. The flow path for the outwash aquifer is initially southwesterly from the landfill. As ground water approaches Spring Brook the flows bend more southerly. At the south end of the landfill, near Spring Brook, ground water flow is actually southeasterly toward Sand Pond and Pine Lake.

There are a number of private wells east of the Site. Trace concentrations (several orders of magnitude below regulatory levels) of Volatile Organic Compounds (VOCs) were detected in private wells east of Spring Brook. Ground water elevations near Spring Brook indicate the presence of a hydrologic boundary for the shallow aquifer that restricts ground water flow to the west for this reason, shallow ground water is not thought to be the source of contamination east of Spring Brook. It should also be noted that with one exception, VOCs were not found in monitoring wells more than 100 yards from the landfill. If VOCs in private wells near the Site actually came from the Site, then (1) monitoring wells over 100 yards from the landfill should have more consistently had VOCs, and (2) the concentrations of VOCs in monitoring wells over 100 yards from the landfill should have been higher than the concentrations of VOCs found in tile more distant off-Site private wells.

The private well construction logs indicate that many of the private wells are screened in the deeper aquifer which is directly downgradient of the Site. VOCs and heavy metal contamination (significantly above background) are presently limited to the outwash aquifer just adjacent to the landfill footprint (several

hundred feet east of Spring Brook). The VOCs found in private wells are inconsistent with the shallow ground water contaminant mixture. One possible explanation for the trace VOCs in the deeper aquifer may be the prior use of cleaners that were washed down drains and leached out of septic systems.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

A. Site History

The 40-acre tract of land that is now the landfill was originally purchased by the FPD in 1960. The surrounding 1,100 acres were purchased during the next five years, with the intent of developing recreational uses after construction of the landfill. Initially, the FPD planned to use a nearby inactive gravel pit for solid waste disposal. However, in 1963 gravel excavations were ongoing at the pit and continued through July 1969. Concurrent with the gravel mining operation, the nearby lakes were enlarged and deepened. The gravel from the pit was sold to offset the cost of lake construction, recreational projects, and flood control projects. With the mining operation generating revenues, and the large amount of clay removed during the lake improvements that could be used for construction of a landfill elsewhere, the FPD abandoned the idea of placing waste in the gravel pit and began development of the landfill in its present location.

The landfill was originally designed with a three-to-one clay to refuse ratio, with the fill area to be constructed as a honeycomb of one-acre cells. Each cell would have a 1.5 foot thick clay base and a perimeter clay berm eight to nine feet in height. Each cell would be filled with two, three-foot lifts of refuse, separated by 6 inches of clay, and the cell would then be covered by 1.5 feet of clay. The cells were to be offset to maximize stability of the landfill. The landfill was then to be capped with 12 feet of compacted clay, covered by soil and vegetation.

Although daily records were not kept to detail how the construction proceeded, generally cells were developed across several acres by building side berms, and then filling the cells with refuse and daily cover. At the completion of each cell, the clay cover was installed and side berms were constructed for the next layer of refuse. As the landfill construction proceeded upward, the clay covers served as the liners for overlying cells. Approximately 1.5 million cubic yards of waste were deposited in the landfill between 1965 and 1973, creating Mt. Hoy which is approximately 150 feet above the original ground surface.

The following is a chronology of activities at the Site:

- 1965 Construction of the landfill.
- 1969 The first leachate well was installed to monitor the amount and types of liquids contained in the landfill.
- 1970's Ten (10) monitoring/piezometer wells were installed surrounding the landfill and measurement of ground water levels and samples for pH and chloride were taken.
- 1973 The last load of public refuse was accepted at the landfill.
- 1976 The picnic and camping areas, hiking trails, swim lake and Mt. Hoy opened at the preserve.
- 1980-82 In 1980, leachate was observed seeping from the north slope of the landfill. For this reason, 23 wells were installed to monitor ground water and two geologic studies were completed.
- 1982 Due to concerns about the accumulation of landfill gases, ten (10) shallow gas vents and six (6) deep gas vents were installed in the landfill.
- 1983 Ground water/surface water sampling program was implemented (continued until 1989).

Leachate is a liquid (usually rainwater) that has percolated through contaminated soil and landfill waste and accumulates and transports contaminants.
- 1984-96 Twenty (20) additional monitoring wells were installed and added to the routine sampling program, two (2) shallow and eight (8) deep gas vents were installed and fourteen (14) borings were completed in the landfill.
- 1986 The Site was evaluated by the U.S. EPA for inclusion on the National Priorities

List (NPL). The NPL is a list of sites throughout the country that are eligible for study and cleanup, if necessary, under the Superfund program.

- 1989 The FPD agreed to conduct a Remedial Investigation (RI) and a Feasibility Study (FS) at the Site. The purpose of the RI was to determine the extent of contamination associated with the Site and evaluate risks to human health and the environment. The FS evaluates alternatives for cleaning up the Site.
- 1990 The Site was formally listed on the NPL.
- 1994 The Remedial Investigation to determine the nature and extent of contamination is approved by U.S. EPA.
- 1995 The Feasibility Study analyzing cleanup alternatives is submitted to U.S. EPA by the FPD.
- 1996 The FPD entered into an Administrative Order on Consent (AOC) to complete several components of the required design and cleanup of the Site under removal authority.
- 1996 The FPD installs nine leachate extraction/landfill gas collection wells.
- 1997 A cap integrity investigation is completed and cap repairs are initiated.
- The leachate system extraction/containment is completed and off-Site treatment begins.
- The landfill gas collection system construction is completed and implemented.
- Five additional compliance/detection monitoring wells were installed.
- 1998 The final cap improvements are completed.

B. Response Actions

The Forest Preserve District, as both owner and operator of the Site, assumed full responsibility for investigation and cleanup. As indicated in the above chronology. EPA and FPD) entered into an Administrative Order on Consent (AOC) in 1996. The purpose of the AOC was to expedite several response actions at the Site. The AOC Statement of Work identified a number of activities the FPD would conduct immediately, including:

- Soil borings to determine if any areas of the landfill did not have a minimum of two feet of low permeability cover material;
- Make any necessary repairs to the cap to ensure two feet of low permeability material is present above the waste;
- Enhance the surface drainage from the landfill to guard against the pooling of surface water and to prevent erosion;
- Install nine leachate extraction wells to remove liquids from within the landfill to protect underlying ground water;
- Install a subsurface pipe-work system to transport extracted leachate to a central collection tank for storage; this leachate is then transported to a permitted off-Site, facility for treatment and disposal,
- Install a passive landfill gas collection system to augment the 25 existing gas vents,
- Provide evidence that trees on the landfill were not in areas where root penetration could allow percolation of precipitation through refuse within the landfill,
- Evaluate the existing monitoring wells and implement monitoring to ensure that contaminant levels were not increasing or moving in a way that they could jeopardize either human health or the environment.
- Provide as-built plans of storm water drainage from the top of the landfill and

make any necessary modifications to ensure that contaminants from within the landfill were not inadvertently being drained from the landfill to nearby areas of the forest preserve; and

- Maintain all components to ensure the continued operation of the systems in the short-term to prevent contamination of ground water from exceeding Maximum Contaminant Levels.

To date, all of these activities have been completed.

III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

The U.S. EPA released a Proposed Plan for the final remedy for the Site for public review and comment on July 8, 1998. The Proposed Plan and supporting documents were placed in the information repositories at the U.S. EPA Region V Office, the Warrenville Public Library and the Nichols Library. A Proposed Plan Fact Sheet was mailed to everyone on U.S. EPA's mailing list and press releases were sent to local media. Notice of the availability of the Proposed Plan was also included in advertisements in the Warrenville Daily Herald and Warrenville Free Press. U.S. EPA held a public meeting on July 22, 1998, at the Warrenville Community Building. At this meeting, representatives of U.S. EPA provided background information on the Site, explained the Proposed Remedy, answered questions and accepted formal comments from the public on the Proposed Plan. U.S. EPA also accepted written comments during the comment period, which ran from July 10, 1998 to August 10, 1998. A response to all comments received during the public comment period is contained in the Responsiveness Summary, which is attached to this ROD.

IV. SCOPE AND ROLE OF RESPONSE ACTION WITHIN SITE STRATEGY

The overall strategy for cleaning up this Site includes a combination of early removal actions conducted under the 1996 AOC, along with contingent and long-term actions described in this final ROD. Removal authority is typically used when emergency situations arise or, as in the case of this Site, when discreet response actions can occur that are: 1) not technically complex. 2) do not require a lengthy planning period, 3) can result in an immediate risk reduction, and 4) the response action is fully consistent with the long-term remedial approach. The required response actions for this Site were not technically complex, a willing Responsible Party was present, and the required response actions could be efficiently and effectively addressed from both a cost and scheduling perspective. For these reasons, U.S. EPA, Illinois EPA and the FPD agreed to conduct early response actions as an integral part of the overall Site strategy for final remedy.

The most significant threat for this Site is leachate, which will continue to be collected, treated and sent off-Site for disposal. The rationale for treatment of leachate is that it has high concentrations of contaminants and presents a large threat for migration to ground water. The leachate has been initially addressed through early actions, however, the long-term component has not yet been addressed. This ROD will address the threat posed by leachate by adding long-term operation and maintenance requirements.

The lower level threats posed by this Site are landfill wastes, landfill gas, and contaminated ground water. These are considered low level threats due to the lower potential for direct exposure, lower toxicity and/or lower mobility. This ROD will address the low level threats of landfill waste and landfill gas through containment. Like the leachate, the landfill waste and landfill gas threats were initially addressed in early actions through cap improvements and the installation and interim operation of a passive landfill gas venting system. These low level threats will be addressed in the ROD through long-term operation and maintenance of the cap and the operation and maintenance of the passive landfill gas system. This ROD will address the low level threat posed by ground water by requiring additional response actions. Finally, this ROD will require contingencies for augmentation of the leachate and landfill gas systems, in the event the early action components, as currently designed, are incapable of meeting the long-term remedial goals of this ROD). This ROD will also include long-term monitoring and periodic remedy review requirements. The overall intent of this ROD is to incorporate all of the previous early response actions and, through the addition of the requirements of this ROD, address all remaining actual, potential, present and future risks associated with this Site.

V. SUMMARY OF SITE CHARACTERISTICS

As stated previously, the Site is an approximately 40-acre landfill. Due to the physical nature of the landfill, disposal has resulted in the contamination of ground water, soil, air, sediments and surface water. The following is a more detailed description of Site features, followed by a summary of the nature and extent

of contamination from the sampling results of the RI and finally a discussion of the estimated risks posed by the contaminated media.

A. Geology and Hydrogeology

Geology

The geology of DuPage County consists of recent alluvial and Pleistocene glacial deposits overlying Silurian dolomite bedrock. The surficial deposits are predominantly the result of Wisconsin-age glaciation, with minor modifications by recent alluvial processes. Till Members of the Wedron Formation, and sand and gravels of the Henry Formation, are present in the area of the Site. The following unconsolidated stratigraphic units have been identified at the Site in ascending order: The Tiskilwa, Till Member, the Maldern Till Member, the Yorkville Till Member, and the Batavia Member of the Henry Formation.

The unconsolidated stratigraphic sequence is variable across the Site in an east to west direction. This is due to the Site's location on the western edge of the West Chicago Moraine. The uppermost till unit present at the Site, the Yorkville Till Member, forms this moraine. Meltwater from the glacier that deposited the till appears to have formed a river which flowed north to south along the front of the moraine. Previously deposited glacial sediments were subsequently eroded and re-deposited as the Batavia Member outwash sands and gravels.

Hydrogeology

The hydrostratigraphic setting at the Site varies in an upgradient to downgradient (east to west) direction. Upgradient of the landfill, the following hydrostratigraphic units are present in ascending order: the bedrock aquifer, the Malden/Tiskilwa Till aquitard, and the Yorkville Till aquitard. Downgradient of the landfill, the following units are found, in ascending order: the bedrock aquifer, the Malder/Tiskilwa Till aquitard, and the outwash aquifer. The landfill lies across the contact between the outwash aquifer and the Yorkville Till aquitard. Therefore, the outwash aquifer is not present upgradient of the landfill.

Two aquifers are present at the Site: the outwash aquifer, that has its eastern-most limit beneath the landfill, and the dolomite bedrock aquifer, which is present beneath the entire Site. These two aquifers are hydraulically connected downgradient of the landfill via the Malden/Tiskilwa Till aquitard.

The glacial outwash aquifer is a valley train deposit, consisting of coarse-grained sand and gravel, deposited by meltwater along the front of the West Chicago Moraine. In boring logs prepared for the Site, the aquifer is described as a brown to gray fine to coarse sand, gravelly sand, or sand with gravel. The range of hydraulic conductivity values determined during the RI for this aquifer was 1.4×10^{-2} cm/sec to 6.4×10^{-2} cm/sec.

The surface water bodies present downgradient of the landfill exert considerable control on the ground water flow system within the outwash aquifer. The West Branch of the DuPage River, exhibits a generally consistent surface water elevation. Sand Pond and Pine Lake are hydraulically connected to the River via the outwash aquifer. The net effect of this hydraulic connection is a flattening of the horizontal gradient in the vicinity of the lakes, as the river's influence is propagated eastward. Spring Brook, located downgradient of the landfill, consistently loses water to the aquifer. This causes development of a zone of stagnation in groundwater between the Spring Brook and Sand Pond. The flattening of the horizontal gradient within the outwash aquifer downgradient of the landfill serves to strengthen the vertical gradient between the outwash aquifer and bedrock aquifer. The flow path for the outwash aquifer is initially southwesterly from the landfill. As ground water approaches Spring Brook the flows bend more southerly. At the south end of the landfill near Spring Brook ground water flow is actually, southeasterly toward Sand Pond and Pine Lake.

Characteristics of the dolomite aquifer were observed in rock cores obtained during the RI. The dolomite was light brown to light gray in color and hard. Fracture orientations noted in the cores were predominantly horizontal. Hydraulic conductivity values determined for the dolomite aquifer during the RI ranged from 7.1×10^{-6} cm/sec to 3.0×10^{-2} cm/sec.

Horizontal gradients within the bedrock aquifer are consistently in a southwesterly direction, toward the West Branch of the DuPage River.

B. Nature and Extent of Contamination

Source Areas

During the RI, samples were taken from the potential source areas and the potential migration pathways at the Site. The source areas included the landfill, leachate, landfill gas, and the media included ground water, surface water, soil, leachate, gas/air and sediment. Additionally, ground water from 51 private supply wells located off-site were sampled to assess potential impacts from Site related wastes.

The major source of this Site is the 40-acre landfill itself. The contents are the source of contaminated soil, migrating leachate, and landfill gas. Approximately 1.5 million cubic yards of refuse were disposed of at the Site between 1965 and 1973. The waste materials have been classified as general household refuse and light industrial waste. Historical records indicated that the users of the landfill were generally municipal waste haulers and scavenger companies from the area. An estimated three, to four tong of waste was disposed of at the landfill per day. Therefuse volume calculated including the interstratified daily cover is 1.9 million cubic yards.

Leachate volumes were estimated at 53 to 74 million gallons prior to the installation of the leachate extraction system. This estimate was based on leachate elevations measured at the vents at the time of the RI, with an assumed refuse porosity of 25 to 35 percent which may overestimate the leachate volume. Modeled leakage from the landfill was estimated between 3.5 million to 5.2 million gallons per year prior to cap improvement and implementation of leachate, and landfill gas extraction systems.

The total amount of landfill gas contained in the landfill is difficult to measure. However, measurements of gas flow at the landfill vents indicated a range in flow volume from a low of "no flow" to 15ft³/min.

Ground water contamination as a source is described as a plume in the shallow aquifer. Ground water contamination at the Site at the time of the RI was mostly limited to the shallow outwash aquifer. The shallow aquifer plume began directly beneath the west half of the landfill (where the outwash aquifer begins) and continued west and southwest of the landfill until the shallow aquifer met surface water. The shallow aquifer is not present upgradient of the landfill. There were lower concentrations of contaminants found in the deeper ground water below and slightly southwest of the landfill footprint at the time of the RI.

Types of Analyses Conducted in the RI

From within the sources and potentially impacted media, a number of different types of analyses were conducted during the RI. The following is a summary of the type of analyses conducted.

Volatile Organic Compounds

- Chlorinated alkenes - Compounds within this group are common industrial solvents which represent a potential degradation sequence.
- Chlorinated alkenes - These compounds are also common industrial solvents which represent a potential degradation sequence.
- Aromatics - This group includes water soluble products from gasoline and other hydrocarbon products. Aromatic compounds are used as solvents and reagents for a variety of manufacturing processes.
- Ketones - Compounds within this group are common solvents, used in paints, cement adhesives, resins, and cleaning fluids.

Semivolatile Organic Compounds

- Phenols - These compounds are used in adhesives, epoxies, plastics and a variety of synthetic fibers and dyes.
- Polynuclear Aromatic Hydrocarbons (PAHs) - This group of compounds is associated with and derived from coal and oil, and the incomplete combustion of carbonaceous materials. Asphalt or blacktop are other common sources for PAHs.
- Phthalates - These compounds are associated with plastics and plastic making processes. and are common laboratory contaminants associated with sample containers.

- PCBs - Compounds within this group are mixtures of polychlorinated biphenyl-S identified and sold under the trade name Aroclors. Aroclors were formerly used extensively in industrial applications as non-flammable oils for high temperature applications.

0

Metals - Metals are discussed based on toxicity. Metals analyzed included:

- Non-regulated nutrients or low-toxicity metals
- RCRA-toxic metals
- Metals regulated by U.S. EPA Maximum Contaminant Levels (MCLs) or Illinois Ground Water Quality Standards.

The revised RI was completed in 1994, the following subsections summarize the results of this sampling by media.

A. Landfill Leachate

Organics - The organic chemicals detected in the 4 leachate samples included chlorinated alkanes and alkenes, aromatics and ketones. Ketones were found at the highest concentration (17,000 ug/L of 2-butanone). Significant concentrations of acetone (10,000 ug/L). and toluene (3,200 ug/L) were also found. Also, trichloroethene was found as high as 720 ug/l, which exceeds the RCRA Toxicity Characteristic Leaching Procedure limit. No Ketones were detected in any other media than the leachate.

Semivolatiles detected in leachate include phenols, phthalates and PAHs, the highest being 4-methylphenol found at 17,000 ug/L.

Select VOCs/SemiVOC's in leachate from the RI are presented in Table 1.

Table 1. Select VOCs and SemiVOCs in Leachate

Well Location	Volatile Organic Compounds	Concentration in (ug/L)	EPA TCLP
SV5	vinyl chloride	22	200
SV8	acetone	10,000	
SV5	chlorobenzene	28	100,000
DV5	ethylbenzene	130	
DV8	1,1-dichloroethane	180	
SV9	1,2 dichloroethene	480	
SV9	trichloroethene	720	500
SV9	tetrachloroethene	220	700
SV8	benzene	160	500
SV8	4-methyl-2-pentanone	1,100	
SV9	toluene	3,200	
SV9	xylenes	470	
SV8	2-butanone	17,000	
SV8	4-methylphenol	17,000	

Exceeds RCRA TCLP Waste Designation

Inorganics - Metals were detected in all of the leachate samples, at concentrations generally higher than found in ground water or surface water. Antimony and selenium were the only two metals that were tested for but were not detected in the leachate. The more significant regulated inorganics such as arsenic, barium, cadmium, chromium, lead, mercury and silver were all detected in the leachate samples. Maximum concentrations of 4.7 ug/L for mercury and 482 ug/L for lead were detected in the leachate. The other inorganics were detected, but were either at much lower levels, and/or were not regulatorily or environmentally significant. RCRA Toxicity Characteristic Leaching Procedure (TCLP) were not exceeded for any of the inorganics detected in leachate.

Table 2. Select Inorganics in Leachate

Location	Metal	Concentration (ug/L)	TCLP(ug/L)
SV9	iron	2,410,000	
DV5	arsenic	45.7	5000
SV9	sodium	1,200,000	
SV9	manganese	59,800	
SV9	lead	482	5000
SV9	cadmium	150	1000
DV5	chromium	144	5000
SV9	mercury	4.7	200
SV9	cyanide	13.0	

No pesticides or PCBs were detected in any of the leachate samples.

B. Landfill Gas

Landfill Gas- Similar contaminants were found in the landfill gas to those found in leachate. Compounds found in the landfill gas included BETX compounds (benzene ethylbenzene, toluene and xylene) and chlorinated solvents (trichloroethene, tetrachloroethene, trans-1,2-dichloroethene, cis-1,2-dichloroethene, and vinyl chloride). Other volatile compounds detected in landfill gases included freon compounds, acetone, methylene chloride, 4-methyl-2-pentanone, and 2-butanone. Toluene was detected at the highest concentration (92,000 ppbv).

There are no direct regulatory comparisons for landfill gas. However, although similar compounds were detected in the landfill gas and the leachate, the concentrations in the gas were generally higher than those in leachate. For example, the maximum vinyl chloride concentration was 22 ug/L in the leachate at SV5 and 21,000 ppbv in the gas at SV04 (note: all gas concentrations are expressed as ppb in air on a volumetric basis). Similar trends were observed in other compounds such as toluene in leachate at 3,200 ug/L and 92,000 ppbv in gas and tetrachloroethene at 220 ug/L in leachate and 17,000 ppbv in gas. Of the organic compounds detected, eight were found in landfill gas samples and not leachate. Table 3 is a select group of RI landfill gas results.

Table 3. Select Landfill Gas Results

Location	Compound	Concentration (ppbv)
SV04	vinyl chloride	21,000
SV08	methylene chloride	17,000
SV09	trichloroethene	28,000
DVI0	tetrachloroethene	17,000
DV05	1,4-dichlorobenzene	7,300
SV02	benzene	2,700
SV08	toluene	92,000
SV04	cis- 1,2-dichloroethene	44,000

C. On-Site Soils

Soils -Thirteen soil sample were collected at ten locations during the Remedial Investigation (RI). Two samples were taken at three locations and one sample each at seven locations. Five of these samples were in background locations. The on-Site surface soil sampling included potential run-off areas, seep areas and landfill cover soil.

Organics - No volatile organic compounds were detected in soils except for low levels of 1,1,1-trichloroethane in two background samples. One sample from a leachate seep area indicated semivolatiles including benzo(b)fluroanthene and benzo(k)fluroanthene both at 580 ug/kg and one background sample detected semivolatiles. Also, one sample and its duplicate indicated 56 and 47 ug/kg PCBs at a depth less than 6 inches. No PCBs were detected at the next deeper interval.

Inorganics - In general, the highest metal concentrations were from soils thought to be in the drainage way west of the Swim Lake parking lot. However, with the exception of silver, all metals analyzed did not exceed 3-times background.

Table 4. Select Inorganics in Soils

Location	Metal	Concentration (mg/L)	Background
----------	-------	----------------------	------------

SS06	iron	24,300	21,140
SS03	arsenic	6.5	6.46
SS01	lead	36.7	24
SS01	chromium	70.8	28
SS01	mercury	0.19	0.08

No pesticides were detected in any of the surface soil samples obtained at the Site.

D. On-Site Ground Water

Ground Water Organics - Periodic ground water sampling began for this Site in the 1980's. Nineteen of the 23 downgradient wells sampled contained organic compounds, including chlorinated alkenes such as tetrachloroethene, trichloroethene, 1,2-dichloroethene and vinyl chloride and alkanes such as 1,1,1-trichloroethane, 1,1-dichloroethane, and chloroethane. In addition, the aromatic Compound benzene was identified in 4 wells. The highest VOC concentrations were detected in shallow monitoring wells close to the landfill.

Of the 32 VOCs detected in leachate, only 9 were present in ground water. Select VOCs and SVOCs in ground water are presented in Table 5.

VOC concentrations in ground water have improved significantly over time, but there is one on-Site shallow well that still exceeds the regulatory standards. The highest concentrations were detected in monitoring wells directly downgradient of the landfill in the shallower outwash aquifer. Concentrations of total VOCs detected in the deeper bedrock aquifer have historically been much lower (10 ppb or less). Column 4 of Table 5 summarizes some of the results of the November 1997/July 1998 quarterly ground water sampling for comparison to the 1991/92 RI data. Figure 3 shows the estimated VOC plume (based on November 1997 data).

Inorganics in Ground Water - Although metals were detected in the shallow outwash aquifer, with the exception of iron and manganese, EPA Maximum Contaminant Levels (MCLs) were not exceeded. Iron and manganese concentrations in the shallow aquifer exceeded expected background levels, exceeded the EPA MCL secondary standard (the secondary standard is for drinking water aesthetics and not health) and the IEPA Class I Drinking Water Standards. Table 6 summarizes select on-Site metal samples. As illustrated in column 4 of Table 6, sampling in 1997 continues to show significant improvement but there are still exceedences of IEPA Class I Drinking Water Standards for iron and manganese in the shallow aquifer. Manganese and iron were also detected above background in five and three bedrock aquifer wells respectively. Current bedrock aquifer sampling indicated no exceedences of iron above the IEPA Class I Drinking Water Standards, but the U.S. EPA secondary standard was exceeded (secondary standards relate to the aesthetics of drinking water, i.e., taste and smell) for iron and the IEPA standards were exceeded for manganese.

E. Private Wells

Organics - In addition to the wells sampled on-Site, 51 private ground water wells located both downgradient and upgradient of the Site were sampled. No semivolatiles or PCBs were detected. The VOCs 1,1-dichloroethane and cis-1,2-dichloroethene were detected in 15 private wells, however the concentrations were very low (0.6 to 2 ppb). There is no regulatory standard for 1,1-DCA and the standard for 1,2-DCE is 70 ppb, indicating that these concentrations are well below the regulatory standard. It is speculated that the low level VOCs may be a result of cleaners disposed of in nearby septic systems.

Inorganics - As anticipated, some levels of background inorganics were detected in all private wells. Arsenic, lead, zinc manganese, iron and calcium concentrations were the significant inorganics. Arsenic was detected in 14 of the 51 downgradient wells but at levels below the MCL. Arsenic concentrations downgradient of the Site were not significantly different than upgradient concentrations.

Lead and zinc were detected in several private wells, but at levels higher than Site monitoring wells. This suggests that these metals may have been a result of the private water systems.

Manganese was detected in 24 of the 51 downgradient private wells and 5 upgradient wells. The SMCL was

exceeded in eight downgradient wells for manganese. This indicates a potentially high background concentration of manganese.

Iron concentrations were present in 44 of the 51 downgradient wells and all 5 upgradient wells exceeded the State Drinking Water Standard. This indicates high background concentrations of iron.

Several trace pesticides were detected in samples that were not detected in any Site media. These pesticides may have been a result of laboratory contamination.

F. Surface Water

Surface water samples were taken from Silver Lake, Pine Lake, Sand Pond, Spring Brook and at off-Site background locations.

Organics - No organic compounds were found in any of the surface water samples.

Inorganics - Samples from Silver Lake contained concentrations of arsenic, mercury, copper, calcium, magnesium, potassium and sodium. However, the concentrations were less than two times other background samples. Aluminum, lead and manganese were found in Silver Lake, but not in the background samples. Barium and iron were detected at concentrations greater than two times background concentrations.

Surface water samples from Pine Lake indicated the presence of inorganics, but only manganese was present at concentrations greater than background.

Analysis of surface water samples from Sand Pond included barium, manganese, calcium, iron, magnesium and sodium. The concentrations were present at greater than two-times other background samples.

The highest concentrations of inorganic constituents detected in surface water were found in Spring Brook. However, these concentrations are not believed to be related to the landfill, since Spring Brook receives wastewater effluent upstream of the landfill, is subject to upgradient surface water run-off, and is a losing stream to ground water.

G. Sediment

No pesticides or PCBs were detected in any of the sediment samples.

Organics - The only VOCs detected in sediment samples were from Sand Pond. The VOCs detected were vinyl chloride (5 ug/kg) and 1,1-dichloroethane (3 ug/kg). SVOCs were detected in both background sediment samples and samples potentially impacted by Site run-off. Site samples generally contained higher concentrations of SVOCs than were found in background samples.

Inorganics - Sediment samples from the Site lakes generally contained metals at concentrations less than two times other background samples. While metals were detected in the downstream sample from Spring Brook at greater than two times the concentrations detected in the upstream sample, these elevated concentrations are not attributed to the landfill. Spring Brook discharges to the water table downgradient of the landfill and receives wastewater influent and surface water run-off upstream of the landfill.

C. Current and Potential Future Site and Resource Uses

Present and Future On-Site Land Use - The current on-Site land use is now and, for the past 20 plus years, has been recreational. Future land use changes are prohibited by the Forest Preserve District Charter across the entire Forest Preserve and specifically in the area of the landfill by EPA-required deed restrictions from the AOC. The FPD will continue to manage the entire Forest Preserve surrounding the landfill recreationally and prohibit any other use, in perpetuity. Therefore, potential future land use changes on-Site are not considered reasonable.

Present and Future Off-Site Land Use - Because the landfill is part of an approximately 1200-acre Forest Preserve, the only adjacent land use of significance is west of Spring Brook due to its proximity to the landfill. This area is now, and for the purpose of future use considerations, will be assumed to be residential. There is no real likelihood of future use changes on-Site that would increase exposure to adjacent property to Site soils, sediments, leachate, landfill gas, or surface water. Therefore, off-Site future use will be discussed only to the extent ground water threatens to migrate.

Present and Future On-Site Ground Water Use - Similar to the present and future land use, the ground water use is restricted on-Site. The Forest Preserve Charter restricts residential development which indirectly restricts residential ground water use on-Site. Further, deed restrictions specifically prevent installation of wells in the area of the landfill. It is reasonable to assume that these restrictions will last in perpetuity. Although ground water use is restricted, by definition, the State of Illinois considers this ground water to be Class I Drinking Water and EPA requires restoration of ground water to its beneficial use. Ground water on-Site directly down gradient from the landfill exceeds both the EPA MCLS and the IEPA Class I Drinking Water Standards. For this reason, the ground water remedy will be required to meet these standards in a reasonable time-frame.

Present and Future Off-Site Ground Water Use - There are private wells currently in use both east and west of Spring Brook. On-Site ground water is classified by the State of Illinois for use as Class I drinking water. This is the most conservative classification has the most stringent standards, and represents the most reasonable future use protection. As with the on-Site ground water, EPA MCLs also apply to off-Site ground water. Currently, contamination in the shallow aquifer near the landfill foot print has exceedences in both VOCs and metals. There is a 300-600 foot buffer of shallow ground water between the landfill and Spring Brook where there are exceedences of the EPA Secondary MCL for iron and manganese but below any EPA primary MCL. However, the shallow aquifer does not flow off-Site due to the Spring Brook hydrologic boundary. Finally, in addition to the buffer zone and hydrologic boundary, the deeper aquifer supplies water to the vast majority of private wells.

Deep ground water does flow toward the adjacent private wells, but does not contain Site related VOC contamination. Metals present in on-Site deep ground water exceed the State Class I Drinking Water standards, but are not significantly greater than upgradient samples. Some manganese and/or iron concentrations exceed the EPA secondary standards in the deep aquifer at the Site boundary. However, secondary standards are for drinking water aesthetics (i.e., taste and smell) and do not present health risks. The deeper aquifer exceeds the EPA secondary standard for total dissolved solids, which is not thought to be related to the Site. At the present time, both manganese and iron at the Site boundary are currently not significantly higher than upgradient concentrations.

VI. SUMMARY OF SITE RISKS

A. Human Health Risks

CERCLA requires that U.S. EPA protect human health and the environment from current and potential exposure to releases of hazardous substances at or from the Site. As part of the RI, a Baseline Risk Assessment was required to assess the current and potential future risks posed by the Site. The Baseline Risk Assessment determines whether contamination at the Site could pose an unacceptable health risk or environmental risk, in the absence of any remedial action. Potential threats to public health are estimated by making assumptions about the manner, frequency, and length of time a person could be exposed to Site-related contaminants.

All chemicals identified in Site media were evaluated: soil, ground water, surface water, sediments, gas and leachate. Each sample was assessed by evaluating data qualifiers and blank sample concentrations. The RI data from each media was evaluated to select Contaminants of Potential Concern (CPCs). CPCs are those chemicals present at the Site most likely to be of concern to human health and the environment. CPCs were selected based on a comparison of contaminants found in each media to background and blank sample data for each media. Table 7 summarizes the CPCs selected for each media from the RI. Based on the results of the RI, U.S. EPA directed the PRPs in calculating the risks that the Site would pose to human health and the environment if no remedial actions were taken.

The risk assessment process involves assessing the toxicity, or degree of hazard, posed by the substances found at the Site, and the routes by which humans and the environment could come into contact with these substances. There are some uncertainties inherent in the assessment. The primary sources of uncertainty in the preparation of a risk assessment are:

- Problems with environmental sampling and analysis, and selection of chemicals;
- Exposure parameter estimation;
- Toxicity values may over or under-estimate risk (especially animal studies extrapolated to humans);
- Behavioral patterns cannot be predicted with certainty, and
- Models used to predict environmental fate and transport may over or underestimate risk.

SEMI VOLATILES

1,4-Dichloro benzene	X		
Acenaphthene		X	
Fluorene		X	
Phenanthrene		X	X
Anthracene		X	
Fluoranthene		X	X
Pyrene		X	X
Butyl benzylphthalate		X	
Benzo(a) anthracene		X	X
Chrysene		X	X
Benzo(b) fluoranthene		X	X
Benzo(k) fluoranthene		X	X
Benz-o(a)pyrene		X	X

Analytes	LF	Private								
	Gas	Wells	Silver Lake	Sand Pond	Pine Lake	Silver Lake	Sand Pond	Pine Lake	Land-fill	Ditch
Selenium										X
Silver		X							X	
Sodium		X		X						
Zinc						X	X			
TIC GROUP										
Acids cyclic										
Acids, non-cyclic				X						
Alcohols cyclic										
Alcohols, oxygenated										
Ethers, cyclic			X							
Amines										
Benzenes, ethyl methyl										
Benzenes, halogenated										
Benzenes, oxygenated							X		X	
Benzenes, propyl										
Benzenes, trimethyl										
Hydrocarbons, branched		X								
Hydrocarbons, cyclic		X								
Ketones, cyclic										
Pyridines, substituted										
Phenols, substituted										
PAHs, non-TCL									X	
Furans										
Sulfides								X		

Notes.

Refer to Section 8.2 of the RI report for a description of the method used to select chemicals of potential concern. It should be noted that a chemical does not necessarily pose a health concern just because it was selected as a Contaminant of Potential Concern. Rather, based on the chemical concentration, it was considered to be elevated above normal levels for the area (i.e., background), and therefore was considered a chemical of potential concern to be evaluated within the risk assessment. Essential nutrients (calcium, magnesium, iron, potassium), even if elevated above background concentrations, were not considered chemicals of potential concern because of their low toxicity.

Legend

LF - Landfill

TIC - Tentatively Identified Compound

The Baseline Risk Assessment evaluated current and future potential human health or environmental risks associated with the Site. The qualitative risk assessment examined contaminants detected in ground water and soils during the field investigation phase of the RI. These contaminants were evaluated with respect to their carcinogenicity, toxicity, and possible exposure pathways from and at the Site.

In order to conduct a conservative evaluation of the risks posed by the Site, a number of critical assumptions were made, including the following:

- No corrective action will take place;
- There are no ground water restrictions;
- There is no potential for future development of the Site;
- The area around the surrounding the Site will be residential;
- The contaminant concentrations in the various media will not to change over time;
- The Site is adequately characterized;
- The Contaminants of Potential Concern are associated with the majority of Site health risk; and
- Risk/dose within an exposure route are additive.

With knowledge of the risk assessment uncertainties and assumptions, the first step in the risk assessment process is to determine which chemicals are of concern to human health. To determine this, a comparison of the concentrations of the chemicals detected in each media and in areas potentially impacted by the landfill, is made to concentrations of chemicals in the same media collected in areas not impacted by the landfill (commonly called "background"). This comparison was made to determine which chemical concentrations in each media were significantly elevated above background. The chemicals detected above background are considered to be the Contaminants of Potential Concern. Health risks are calculated for each Contaminants of Potential Concern. Based on this analysis, it was determined that there were Contaminants of Potential Concern in sediment and surface water samples from Silver Lake and Sand Pond and in soil samples collected on the landfill. There were also Contaminants of Potential Concern in the air, (based on modeling of landfill gas emissions), and in private well samples. While no tissue samples were analyzed from fish in the Site lakes, it was conservatively assumed that fish may contain certain Contaminants of Potential Concern detected in the Silver Lake sediment samples.

The second step was to determine pathways of exposure, based on current land use conditions, and the characteristics of contamination at the Site. Activity assessments were conducted of Blackwell Forest Preserve recreational users and employees. These surveys were performed to determine how frequently, and for what duration, each of these populations were likely to be in an area where it was likely that they would be exposed to any Contaminants of Potential Concern in all medias (i.e., sediment, surface water, soil, ambient air and fish). In addition, demographic information was collected on residents living near the landfill. Information on the duration of time residents normally live at a residence was determined from national statistics. Residents living near the landfill, in the downgradient direction of ground water flow, were conservatively considered to be exposed to Contaminants of Potential Concern in the air and in private well water. Based on the activity assessments and national statistics, and the concentration of Contaminants of Potential Concern in media, estimates of chemical exposure were calculated for each population.

Risks were quantitated for those potentially exposed subpopulations to represent a Reasonable Maximally Exposed population (RME population), rather than each exposed subpopulation. The reasonable maximally exposed subpopulation represents the subpopulation that, for reasons of their sensitivity, and/or lifestyle, have the greatest potential for exposure proportional to the level of human exposure. This RME population is considered to be the most likely group potentially affected by contamination at the Site. The current and future land use health risks association with exposure to contaminated media were evaluated for:

- Recreational users;
- Trespassers;
- Employees; and

- Off-Site residents.

Toxicity information was compiled for each Contaminants of Potential Concern. Individual chemicals were separated into two categories of chemical toxicity, based on whether they exhibited principally noncarcinogenic or carcinogenic effects. Next, the health effects of both categories of chemicals were evaluated. Known or suspected carcinogens and non-carcinogens were addressed independently.

The risk characterization integrates the exposure and toxicity assessments into a measurable expression of risk for each exposure scenario. The cancer risk is expressed as a probability of a person developing cancer over the course of his or her lifetime. Cancer risks from various exposure pathways are assumed to be additive. Excess lifetime cancer risks less than 1×10^{-6} (one-in-one million) are considered acceptable by U.S. EPA. Excess lifetime cancer risks between 1×10^{-4} (one-in-ten thousand) to 1×10^{-6} require U.S. EPA and Illinois EPA (the Agencies) to decide if remediation is necessary to reduce risks and to what levels cleanup will occur. Excess lifetime cancer risks greater than 1×10^{-4} generally require remediation.

For noncarcinogens, potential risks are expressed as a hazard index. A hazard index represents the sum of all ratios of the level of exposure of the contaminants found at the Site to that of contaminants' various reference doses. In general, hazard indices which are less than one are not likely to be associated with any health risks. A hazard index greater than one indicates that there may be a concern for potential health effects resulting from exposure to noncarcinogens. Table 8 summarizes the total risk for all projected users and a theoretical Maximally Exposed Individual (MEI).

Table 8. Health Risk estimates

User	Noncancer		Cancer	
	RME	Ave.	RME	Ave.
Recreational	3×10^{-2}	4×10^{-4}	1×10^{-6}	1×10^{-8}
Trespasser	2×10^{-2}	3×10^{-4}	1×10^{-10}	5×10^{-13}
Employee	4×10^{-2}	1×10^{-3}	1×10^{-6}	2×10^{-8}
Off-Site Resident	9×10^{-1}	5×10^{-1}	3×10^{-6}	4×10^{-7}
MEI	9×10^{-1}	5×10^{-1}	4×10^{-6}	4×10^{-7}

MEI - Maximally Exposed Individual

As shown in Table 8, under the current and reasonable future use conditions, the excess lifetime cancer risks were estimated at or below the 10^{-6} cancer range and several orders of magnitude below the 10^{-4} cancer risk. The Maximally Exposed Individual (MEI) was well below the acceptable risk range of 10^{-4} to 10^{-6} .

The excess cancer risk for the Reasonable Maximum Exposure (RME) to the Maximally Exposed Individual (MEI) is 3×10^{-6} to 4×10^{-6} for the most at risk off-Site resident. However, the 3×10^{-6} in off-Site resident total cancer risk is largely due to traces of pesticides found in 5 of 51 off-Site residential wells. Pesticides were not found in leachate samples or monitoring wells around the landfill and the pesticides are believed to be from past agricultural land use or laboratory artifacts.

The non-cancer hazard index for the RME to the MEI is 0.9. While this is very close to 1, 93% of the noncancer health risk is associated with antimony exposure from one off-Site residential well. The antimony (and lead) in this well is believed to be from the home's water distribution system, not from the landfill.

B. Ecological Risks

An ecological assessment was conducted to evaluate the potential risks to non-human receptors associated with the Site. Potential receptors and exposure pathways were evaluated, including the presence of endangered or threatened species in the area. The objectives of the ecological assessment was to:

- Characterize the natural habitats and populations on and in the vicinity of the Site (ecological communities);
- Identify those habitats and populations that may be influenced by the Site; and
- Evaluate actual or potential adverse effects that chemicals from the Site may have on these habitats and populations.

Ecological inventory information was reviewed and the Site was inspected for signs of adverse ecological effects. Environmental media were sampled and analyzed to determine if chemicals which could adversely affect ecological communities at the Site were present. To derive an indication of what compounds or chemicals would be most likely to represent a risk to the environment, conservative values for chemical toxicity and biotic uptake were used to indicate potential biotic effects from detected Contaminants of Potential Concern. The results of these analyses are:

- There appears to be little risk to ecological communities and or populations in those, communities at the Site from organic chemicals in environmental media, since the organic species were either not detected (pesticides), detected at few locations and at very low concentrations (VOCs), were not Site related (SVOCs), or were determined to be present at concentrations below which adverse ecological effects are associated (SVOCs and PCBs in the terrestrial environment);
- Metals are Contaminants of Potential Ecological Concern in some sediment samples. However, metals concentrations of potential concern are limited to isolated areas;
- Metals of potential ecological concern in Site surface soils appear to be present in concentrations lower than those sufficient to affect small terrestrial mammal populations;
- Contaminants of Potential Ecological Concern at concentrations detected in surface water do not appear to pose and ecological hazard to aquatic species in Silver Lake and Sand Pond;
- Possible risk from SVOCs in sediment exist in sediment at one isolated location in Silver Lake. This location is near an asphalt parking lot. It is possible that the SVOCs are from the parking lot, not the Site; and
- Sampling, analytical, and statistical uncertainties affect the Ecological Assessment. Application of limited reference data, assumptions on the size, range and feeding rates of species, and influences at the Site, other than influences from Contaminants of Potential Concern, also introduce uncertainties into the Ecological Assessment.

C. Remedial Objectives

As stated previously, there have been a number of early actions completed under CERCLA removal authority that addressed contamination on an interim basis. The following is a description of the final remedial objectives for this Site in light of the previously completed response actions.

Landfill Cap - The long-term remedial objective for the cap is to minimize infiltration into the landfill, and eliminate potential direct exposure to leachate, landfill gas, and contaminated soil/waste material within the landfill. As stated previously, a study was completed to determine the extent of refuse, determine the extent of a minimum of 2 feet of low permeability materials above that refuse, and make any required improvements to the cap. The study was completed and the cap improvements have been completed. Compliance with long-term Post Closure Care requirements of Illinois Administrative Code under IAC 35 807 and 811 for the cap are the critical ARARs for this objective.

Leachate System - The critical objective is to manage the threat of the leachate migration and exposure through a requirement for active collection and off-Site treatment and disposal. As described previously, nine extraction wells were placed into the landfill. The intent of the leachate collection system was to install a sufficient number of extraction wells to capture leachate throughout the landfill. The leachate system was designed to minimize leachate seeps out of the landfill, eliminating any potential for direct exposure, and to protect against leachate migrating to ground water that results in an exceedence of regulatory standards. The leachate system is designed so that if in the future it is determined to be insufficient in meeting these objectives, it can be readily upgraded. Long-term operation of the leachate collection, storage system with off-Site disposal will require compliance with Illinois Administrative Code for Post-Closure requirements (35 IAC) and the National Pollutant Discharge Elimination System (NPDES) permit (40 CFR 122 and 125) for leachate disposal. Augmentation of the system will require compliance with Illinois Administrative Code (35 IAC) and OSHA construction requirements.

Landfill Gas System - The objective of the landfill gas system is to appropriately manage landfill gas to minimize migration into ground water or through the cap. By reducing gas buildup beneath the cap, it is anticipated that full recreational use of the hill can be maintained. A landfill gas system was installed concurrently with the leachate extraction system and is up and running. The landfill gas system is also

flexible so that if in the future it is determined to be insufficient in meeting these objectives, it can be augmented. Long-term operation will require compliance with Illinois Administrative Code (35 IAC) Post-Closure requirements for Landfill Gas Management and the Clean Air Act. Augmentation of the system will require compliance with Illinois Administrative Code (35 IAC) and OSHA construction requirements.

Ground Water - The remedial objective for ground water is to restore all ground water beyond the landfill boundaries to its maximum beneficial use in a reasonable amount of time. This objective will be measured against the Safe Drinking Water Act EPA MCLs and IEPA Class I Drinking Water Standards.

Long-term Monitoring - The objective of the long-term monitoring is to ensure no unacceptable exposure through long-term remedy performance. Long-term monitoring will be subject to Illinois Administrative Code (35 IAC) Post-Closure Requirements.

Institutional Controls - Another important remedial objective for long-term Site management is to restrict any activities that would interfere with the remedy.

VII. DESCRIPTION OF ALTERNATIVES

The following is a discussion of remedial alternatives developed and evaluated for the Site. One of the four remedial alternatives is the "no action" alternative and the other three require further response actions. The NCP requires that a no-action alternative be considered at every Site. The no-action alternative serves primarily as a point of comparison for other alternatives. These alternatives were developed from applicable remedial technology process options and are, evaluated for effectiveness, implementability and cost. The alternatives meeting these criteria were evaluated and compared to the nine criteria required by the NCP. Treatability studies were not performed in support of this remedy decision and are not anticipated to be a necessary part of implementation of any of the alternatives for this Site.

SOURCE CONTROL ALTERNATIVES

Common Components

Due to fact that a number interim actions have occurred at the Site, all alternatives include the following components completed in the early action.

1. Institutional Controls

Institutional controls include fencing, deed restrictions, and warning signs. Site access is controlled by a fence and warning signs to discourage unauthorized entry onto the Site. Deed restrictions have been instituted to prohibit disturbance of the Site and preclude future development of the Site.

2. Flood Protection

Erosion control measures were completed during early action construction to ensure tile reduction of flood water velocity during future flooding.

3. Storm Water Controls

Storm water control measures were completed during the early action to control storm water (i.e., runoff control berms, engineered slope, discharge ditches).

4. Improved Landfill Cap

An improved landfill cap was constructed over parts of the landfill where insufficient low permeability materials were present, in accordance with the applicable Illinois EPA's Solid Waste Management Regulations. The landfill improvements prevent direct contact with the waste, prevent migration of contaminated soils into surface water, reduce infiltration of precipitation into the landfill thereby reducing generation of leachate and also aid in reducing the percolation of leachate from the landfill into ground water. There will be no additional cap construction under the proposed final Site-wide remedy.

5. Ground Water Monitoring

A ground water monitoring network was established on the Site using existing monitoring wells and the construction of 5 new monitoring wells to monitor upgradient and downgradient ground water conditions.

6. Gas Collection

Landfill gases are being collected with passive gas extraction wells. Landfill gases are collected from the extraction well locations and vented at the top of Mt. Hoy.

7. Leachate Extraction

Leachate is currently being extracted from the landfill. A series of 9 vertical extraction wells were installed in the landfill and screened in the permeable water-bearing zones. Leachate is collected by a system of piping buried under the landfill cap and is temporarily stored in a 10,000 gallon holding tank.

8. Leachate Treatment

The leachate treatment system includes off-Site transport to a permitted treatment system capable of treating the appropriate contaminants (i.e., volatile organic compounds, semi-volatile organic compounds, and metals).

The following is a list of the technologies evaluated and a discussion of the alternatives to be added to the activities previously completed and described above.

Alternative 1 - No Action

Description: No Action

Estimated Capital Cost:	\$0
Estimated Annual O&M Costs:	\$0
Estimated Present-Worth Costs:	\$0
Estimated Implementation Time frame:	None

The inclusion of the No-Action Alternative is required by law to give U.S. EPA a basis for comparison. This Alternative does not take any action to remediate the Site and does not consist of any treatment components, engineering controls, monitoring, or institutional controls. This Alternative involves no remedial measures and would not effectively (1) prevent migration of leachate to ground water (possibly resulting in exceedences of regulatory standards), (2) reduce the volume of leachate, (3) control landfill gas emissions, or (4) eliminate the potential for direct exposure. The majority of Remedial Action Objectives would not be met with this Alternative.

Alternative 2 -- Long-Term Leachate Extraction and Off-Site Disposal; Contingent Augmentation of the Leachate and Landfill Gas Systems; Long-term O&M for all Existing Components, and Long-term Monitoring

Estimated Costs:

Capital Costs:	
Contingent Leachate System	\$270,000
Contingent Gas	\$ 20,000
CONTINGENT CAPITAL COSTS	\$290,000

Operation and Maintenance Costs:	
Leachate O&M	\$94,000
Cap O&M	\$ 2,400
Landfill Gas O&M	\$ 3,600
Monitoring	\$299,000
ANNUAL O&M	\$399,000

NET PRESENT WORTH	(29 years at 7%)	\$5,739,000
	(29 years at 3%)	\$8,497,000

Estimated Time-frame: Extraction and off-site disposal of leachate, landfill gas management, O&M and monitoring would be ongoing responsibilities.

This Alternative includes long-term operation and maintenance of all of the early action components, including: leachate extraction and off Site disposal, landfill gas management, cap/institutional controls maintenance and long term monitoring of leachate, landfill gas and ground water, as appropriate. In addition,

this Alternative also includes contingencies for the augmentation of the leachate extraction system with up to 9 additional leachate/landfill gas extraction wells and transition from passive to active landfill gas collection with thermal treatment.

Ground water under the Site would not be addressed under Alternative 2 as required by 35 IAC 620.250. Gas venting would be in compliance with 35 IAC 218.

Contingent augmentation of the leachate and landfill gas systems, if necessary, would be in compliance with OSHA construction requirements, 35 IAC 811.309 requirements for leachate treatment and disposal systems, and 35 IAC 811.311 for landfill gas management systems. If a thermal flare is constructed on -Site, monitoring under 35 IAC 212-218 would be required.

Monitoring of leachate, landfill gas and ground water would all be in accordance with an approved Operation and Maintenance (O&M) Plan and 35 IAC Post-Closure Care Requirements.

Alternative 3 - Long-term Leachate Extraction and Off-Site Disposal, Contingent Augmentation of the Leachate System and Landfill Gas Systems; Long-term O&M for all Existing Components; Long-term Monitoring, and Monitored Natural Attenuation for Ground Water

Estimated Costs:

Capital Costs:

Contingent Leachate System	\$270,000
Contingent Gas	\$ 20,000
CONTINGENT CAPITAL COSTS	\$290,000

Operation and Maintenance Costs:

Leachate O&M	\$94,000
Cap O&M	\$ 2,400
Landfill Gas O&M	\$ 3,600
Monitoring	\$299,000
ANNUAL O&M	\$399,000

Monitored Natural Attenuation Costs:

Baseline Study	\$55,000
Additional Monitoring	\$25,000
TOTAL MNA COST	\$80,000

NET PRESENT WORTH	(29 years at 7%)	\$5,819,000
	(29 years at 3%)	\$8,577,000

Estimated Time-frame: Extraction and off-site disposal of leachate, landfill gas management, O&M and monitoring would be ongoing responsibilities. MNA would be shorter-term requirements with the bulk of the work being conducted in the first five years.

Contingent augmentation requirements of the leachate and landfill gas systems in alternative 3 are the same as in Alternative 2. In fact, alternative 3 includes all the components of Alternative 2 with the addition of Monitored Natural Attenuation for ground water. Monitored Natural Attenuation includes an initial comprehensive baseline investigation and periodic sampling to compare projected contaminant concentrations and actual analytical data to measure clean up progress. The Monitored Natural Attenuation of ground water may include varying combinations of biodegradation, abiotic transformation, intrinsic bioremediation, dilution, dispersion and adsorption of ground water contaminants. Preliminary analytical data strongly support the projected success of MNA to meet cleanup goals in a reasonable amount of time.

Order of magnitude decreases in ground water contaminants have been documented from 1992 sampling compared to the results of the 1997/98 data. It is reasonably expected that once the other components of the remedy have been in place for a while, significant additional improvements in ground water quality will be realized. To document this anticipated improvement in ground water quality, significant additional monitoring and modeling will be required. This type of monitoring is more comprehensive than monitoring intended to ensure the effectiveness of the remedy. Ground water under the Site would be managed as a ground water management zone in accordance with 35 IAC 620.250 until Class I potable resource ground water standards listed in 35 IAC 620.410 are met.

Alternative 4 - Long-term Leachate Extraction and Off-Site Disposal; Contingent Augmentation of the Leachate System and Landfill Gas Systems; Long-term O&M for all Existing Components; Long-term Monitoring, and Ground Water Extraction and Treatment Construction/Operation.

Estimated Costs:

Capital Costs:

Contingent Leachate System	\$270,000
Contingent Gas	\$ 20,000
CONTINGENT CAPITAL COSTS	\$290,000
Ground Water Pump and Treat	\$726,000
TOTAL CAPITAL COST	\$1,016,000

Operation and Maintenance Costs:

Leachate O&M	\$94,000
Cap O&M	\$ 2,400
Landfill Gas O&M	\$ 3,600
Monitoring	\$299,000
Ground Water	\$ 83,000
ANNUAL O&M	\$482,000

NET PRESENT WORTH	(29 years at 7%)	\$7,553,813
	(29 years at 3%)	\$10,923,813

Estimated Time frame: Extraction and off-site disposal of leachate, landfill gas management, O&M and monitoring would be ongoing responsibilities. The actual design/construction of the ground water pump-and-treat system would be complete in about 3.5 years.

Contingent augmentation of the leachate and landfill gas systems are the same as in Alternatives 2 and 3. Alternative 4 includes all of the components of Alternative 3, with the exception of the Monitored Natural Attenuation. This Alternative replaces the Monitored Natural Attenuation with ground water extraction and treatment. This would involve installing 20 ground water extraction wells in the upper aquifer downgradient of the landfill to capture contaminants which have the potential to migrate off Site. The extracted ground water would be conveyed through underground piping to a treatment system. Following treatment to remove volatile organic compounds, the treated ground water would be discharged in compliance with a Illinois Administrative Code and NPDES permit (40 CFR 122 and 125) requirements. A pre-design investigation may be necessary to develop the appropriate configuration of ground water extraction wells.

PERIODIC REVIEWS/CONTINGENCIES FOR CLEANUP ALTERNATIVES

Alternatives 2, 3 and 4 will require a critical review after the completion of one year of operation (at a minimum) of the early action. The purpose of the critical review is to determine whether the leachate system and/or landfill gas system augmentation will be required. If data demonstrates that the leachate system is not effective in managing leachate such that it poses a direct exposure threat, or ground water would not be remediated in a reasonable amount of time, up to 9 additional extraction wells would be added. If the data indicate that the landfill gas system is not effective at managing gas, it may be transitioned to active gas collection and require on-Site thermal treatment. Prior to, or at the time of, these critical reviews it may be determined that additional reviews may be required. These periodic reviews are in addition to the CERCLA Five-Year Review process for sites where wastes are left on-Site. If the data available at the first such review is insufficient for a reliable trend analysis, evaluation of remedy performance will be completed in the subsequent review or at some earlier time to be established during the first review.

An evaluation of ground water information gathered for each Five-Year Review will be used to determine whether or not there is a need for additional action to reduce cleanup times. This may be a part of, or in addition to, any required Monitored Natural Attenuation studies required under Alternative 3.

The ground water cleanup goals that must be achieved within a reasonable period of time are EPA MCLs and IEPA Class I Drinking Water Standards. The determination of whether additional measures will be required for ground water will be based on compliance/projected compliance with the cleanup levels within a reasonable period of time. For this type of situation, a reasonable period of time for meeting the MCLs can be defined as less than 30 years.

At each Five-Year Review or earlier, as necessary, U.S. EPA, in consultation with Illinois EPA, will evaluate

the following criteria in order to determine the need for additional remedial measures:

1. Existing contaminant levels;
2. Trends in contaminant concentrations, if any,
3. Effectiveness of the source control measures,
4. Potential reduction in restoration time frames to less than 30 years;
5. Potential for the contaminants in the ground water to reach regulatory standards and/or asymptotic levels throughout the plume; and
6. Alternative remedial measures available to meet ground water standards and the cost thereof,

Additional measures will be necessary if an evaluation of the above criteria indicates: (1) concentrations within the plume have not decreased; (2) concentrations within the plume do not show the potential to decrease below regulatory levels in less than 30 years; or (3) source control measures do not meet their remedial objectives of preventing off-Site contaminant migration.

Long term ground water monitoring would be conducted to monitor and ensure the effectiveness of Alternatives 2, 3 and 4. Ground water monitoring results will be evaluated annually to aid in predicting contaminant trends. The ground water monitoring program developed during the design phase will be used. The plan includes development of a continuous monitoring record; identification of select wells throughout the plume to monitor changes in both the horizontal and vertical extent of the plume; a specific sampling frequency; and identification and monitoring of areas containing higher contaminant concentrations, if any.

If additional measures are determined to be necessary based on Five-Year Reviews, they are likely to involve augmentation of the existing system for components other than ground water. If additional measures are required for ground water, they may include pump-and-treat design or other remedial measures, including any applicable new technology. The applicability of new technologies will be evaluated in terms of technical and economic feasibility. The design of additional measures (should they be necessary) will include: locating extraction wells (or other remedies) to maximize hydraulic capture of the plume and considering areas of greater contaminant concentrations, if any.

VIII. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The following nine criteria, outlined in the NCP at 40 CFR 300.430(e)(9)(iii), were used to compare the alternatives listed above and to determine the alternative for remediation of the soils, leachate, landfill gas, and ground water contamination that: (1) is protective of human health and the environment; (2) attains ARARs; (3) is cost effective; and (4) represents the best balance among the evaluating criteria. The alternative that meets the two "threshold" requirements of protectiveness and ARAR-compliance, and provides the "best balance" of trade-offs, with respect to the remaining criteria, is determined from this evaluation.

A. THRESHOLD CRITERIA

1. OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

Overall protection of the public health and the environment addresses whether a remedy provides adequate protection of human health and the environment and describes how risks posed by each exposure pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Alternative 1 does not meet this criteria because it does not take any action to protect human health and the environment. Therefore, Alternative 1 does not eliminate, reduce, or control risks.

Alternative 2 addresses the threat of leachate through long-term active collection and off-Site treatment and disposal. Leachate collection will reduce leachate migration to receptors, further reducing the potential future exposure of human health and the environment. The long-term cap inspection and repair requirements provide protection against future direct exposure to leachate, waste material and contaminated soils for current and future use. The operation and maintenance of the existing landfill gas systems provides protection against exposure to landfill gas emissions under static conditions. Alternative 2 meets the

contingency requirements for augmentation of the leachate and landfill gas system. However, Alternative 2 does not have a ground water remedy component for future protection of human health and the environment. For this reason, Alternative 2 does not fully meet this criteria.

Alternative 3 contains all of the protections in Alternative 2, with the addition a Monitored Natural Attenuation remedy component for future protection of ground water. The Monitored Natural Attenuation remedy component would provide future protection of human health and the environment. Alternative 3 fully meets this criteria.

Alternative 4 includes all of the protections of Alternative 3 but replaces MNA with a ground water pump-and-treat component. The ground water pump-and-treat system would provide future protection of human health and the environment. Alternative 4 fully meets this criteria.

2. COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS addresses whether a remedy will meet federal and state environmental statutes and regulations and/or provide grounds for invoking a waiver.

A. Compliance with Chemical-Specific ARARs - Table 9 is a summary of Federal and State of Illinois chemical-specific ARARs. Chemical-specific ARARs address air emission standards and ground water quality.

Ground Water Quality - Class I Potable Resource Ground Water Quality Standards listed in 35 IAC 620.410 apply to ground water. For Alternatives 3 and 4, until compliance with the standards of IAC 620.410 is achieved, ground water would be managed as a ground water management zone under IAC 620.250. U.S. EPA MCLs under 40 CFR 141 are relevant and appropriate for ground water outside the boundary of the landfill. Alternatives 3 and 4 contain a ground water component designed to meet Illinois Ground Water Quality Standards and MCLs outside the landfill boundary in a reasonable amount of time. Alternatives 1 and 2 do not contain a ground water component and would not meet either of these chemical-specific standards.

Air Emissions - Air emissions from the passive landfill venting system would be required to meet the requirements of 35 IAC 243 and the Clean Air Act 40 CFR Part 50. The IAC chemical-specific air requirements limits emissions of photochemically reactive organic material (e.g., VOCs) to less than 8 pounds per hour. The system is currently operating below that amount. Should augmentation be required in Alternatives 2, 3 and 4 that result in greater than 8 pounds per hour, controls to reduce emissions may be required.

B. Compliance with Location-Specific ARARs - Table 10 includes a list of potential Federal and State of Illinois location-specific ARARs. Potential location-specific ARARs; relate to flood plains, wetlands and open waters. All alternatives meet the Federal and State of Illinois location-specific ARARs.

C. Compliance with Action-Specific ARARs - Finally, Table 11 contains a list of potential Federal and State of Illinois action-specific ARARs. Action-specific ARARs relate to construction safety standards, cap repair, Post-Closure leachate and landfill gas emissions, water quality, and discharge requirements.

Landfill Cap - Alternatives 2, 3 and 4 require long-term management of the existing landfill cap in compliance with 35 IAC Post Closure Care requirements (35 IAC 807.503-503, 523 and 524 and 811.111). Because there is no cap construction proposed in this remedy, there are no cap construction requirements (35 IAC 811 construction requirements do not apply). Alternatives 2, 3 and 4 would all meet the ARAR requirements for the landfill cap.

Table 9: Potential Chemical-Specific ARARs
DuPage County Landfill/Blackwell Forest Preserve Superfund Site - Warendville, Illinois

MEDIA	REQUIREMENT	CITATION
Surface Water	Protect State water for aquatic life, agricultural use, primary and secondary contact use, most industrial use, and to ensure aesthetic quality of aquatic environment.	Water Quality Standards 35 IAC 302.202-302.212
	Pretreatment Standards of State and local POTW Effluent Guidelines and Standards	35 IAC 310.201-220 35 IAC 304.102-126
	Prohibition of discharge of oil on hazardous substances into or upon navigable waters	Federal Water Pollution Control Act Section 311(b)(3) 40 CFR 110.6,117.21
	Comply with all applicable Federal and State water quality criteria.	CWA Section 304(a) and information published in the Federal Register pursuant to this section; 35 IAC 302.612-669
Groundwater	Meet State Groundwater Quality Standards using a Groundwater Management Zone	35 IAC 620.410 unless modified in accordance with the substantive requirements in 35 IAC 620.250 to 350
	Enforceable numeric standards for public water supplies.	Safe Drinking Water Act MCLs, 40 CFR 141.11-141.16, MCLGs - 40 CFR 141.50-141.51 and Secondary MCLs - 40 CFR 143.3
Air	Air Quality Standards.	35 IAC 243.120-126, Clean Air Act 40 CFR Part 50

Table 10: Potential Location-Specific ARARs
DuPage County Landfill/Blackwell Forest Preserve Superfund Site - Wrenville, Illinois

MEDIA	REQUIREMENT	CITATION
Floodplains	Action to avoid adverse effects, minimize potential harm, and restore and preserve natural and beneficial values (in relation to implementation of the RA).	Executive Order 11988, Floodplain Management, 40 CFR 6, Appendix A, Section 6(a)(5)
	Facility shall not restrict the flow of a 100-year flood, result in washout of solid waste from a 100-year flood, or reduce the temporary water storage capacity of the 100-year floodplain	35 IAC 811.102(b)
	Facility located in a 100-year floodplain must be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood	35 IAC 724.118(b)
	Governs construction and filling in the regulatory floodway of rivers, lakes, and streams of Cook, DuPage, Kane, Lake, McHenry, and Will Counties, excluding the City of Chicago	92 IAC Part 708
Wetlands	Action to minimize the destruction, loss, or degradation of wetlands	Executive Order 11990, Protection of Wetlands, 40 CFR 6, Appendix A, Section 6(a)(5)
	Action to minimize adverse effects of dredged or fill materials	CWA 40 CFR 230.70-230.77
Stream	Requires Federal agencies involved in actions that will result in the control or structural modification of any stream or body of water for any purpose, to take action to protect the fish and wildlife resources which may be affected by the action	Fish and Wildlife Coordination Act, 40 CFR 6.302(g)

**Table 11: Potential Action-Specific ARARs
DuPage County Landfill/Blackwell Forest Preserve Superfund Site - Wrenville, Illinois**

MEDIA	REQUIREMENT	CITATION
Construction	Establishes health and safety standards to be used in construction.	OSHA 29 CFR 1910
Post-Closure Care Landfill	General provisions governing post-closure requirements including the development and implementation of post-closure performance standards, inspection and repair, monitoring requirements and implementation of post-closure activities.	35 IAC 807.501, 502, 503, 523 and 524
	Specific provisions governing post-closure requirements inspections and maintenance periods. Also, specific provisions regarding cap and drainage repairs and future use considerations.	35 IAC 811.111
Post-Closure Care - Leachate	Establishes minimum requirements for leachate sampling.	35 IAC 811.206
	Establishes minimum requirements for leachate collection.	35 IAC 811.308
Leachate Treatment Storage and Disposal	Leachate Treatment and Disposal System: Establishes standards for leachate storage systems and standards for discharge to an off-site treatment works.	35 IAC 811.309(d)(e)
Post-Closure Care - Landfill Gas	Landfill Gas Monitoring Program: Establishes minimum requirements for gas collection at the site.	35 IAC 807,811.310
	Establishes minimum requirements landfill gas sampling.	35 IAC 811.130

Landfill Gas Management	Landfill Gas Management System: Establishes minimum requirements for gas venting and collection systems	35 IAC 811.311
	Visible and particulate matter emission standards and limitations (particulate)	35 IAC 212.123 (visible) and 212.321
	Sulfur air emissions standards and limitations	35 IAC 214.162
	Organic material emissions standards and limitations	35 IAC 215.143
	Carbon monoxide emissions standards and limitations	35 IAC 216.121, 216.141
	Nitrogen oxide emissions standards	35 IAC 217,121
	Volatile Organic Material emission standards	35 IAC 218.143
	Verify that there is no "excessive release" of hydrogen sulfide emissions during landfill gas management.	35 IAC 211.2090, 35 IAC 214.101
	Verify that emissions of hazardous pollutants do not exceed levels expected from sources in compliance with hazardous air pollution regulations.	415 ILCS 5/9.1(b), CAA Section 112, 40 CFR 61.12-14
	Estimate emission rates for each pollutant expected.	35 IAC 291.202
	Develop a modeled impact analysis of source emissions.	35 IAC 291.206
	Use Reasonably Available Control Technology (RACT).	35 IAC 211.5370, 35 IAC Part 215, Appendix E
Landfill Gas Processing and Disposal	Landfill Gas Processing and Disposal System: Establishes minimum requirements for landfill gas processing and disposal	35 IAC 811.312
Post-Closure Care - Ground Water	Groundwater Monitoring Program: Establishes minimum requirements for groundwater monitoring at the site	35 IAC 811.319(a) and Part 811.318
Discharge to POTW	Prevent introduction of pollutants into POTW which will interfere with POTW operation.	35 IAC 310.201(a)(c) and 310.202, and local POTW regulations
	Establishes standards for discharges to POTWs.	CWA 40 CFR 403, 40 CFR 122 and 125, and 40 CFR 131

Leachate - Extracted leachate associated with Alternatives 2, 3 and 4 would continue to be extracted, collected and transported off-Site to a POTW and treated under an existing permit. This would be in accordance with Illinois Administrative Code 35 Post-Closure Care (35 IAC 807 and 35 IAC 811.206) and for Leachate Treatment, Storage and Disposal (35 IAC 811.309 and NPDES/CWA 40 CFR 403). If augmentation was required to the leachate system, it would be completed in compliance with OSHA requirements (29 CFR 1910) and Illinois Administrative Code 35 for leachate collection (35 IAC 308) and leachate system construction and off-site discharge requirements (35 IAC 811.309). Alternatives 2, 3 and 4 would meet these requirements.

Air Emissions - Air emissions from the landfill gas system (Alternatives 2 through 4) would be subject to the relevant Post-Closure requirements of 35 Illinois Administrative Code (35 IAC 807, 811.130, 310 and monitoring under 218.143) and the Clean Air Act (CAA Section 112, 40 CFR 61.12-14). Alternatives 2, 3 and 4 would meet these requirements. If augmentation including on-Site construction of a thermal treatment device is completed, it would be done so that it is in compliance with OSHA construction standards and Illinois Administrative Code for construction of landfill gas systems (35 IAC 811.310 and 311). The augmentation would also trigger sampling under 35 IAC 221-218 and compliance with the Clean Air Act, Section 112, 40 CFR 61.12-14. Alternatives 2, 3 and 4 would meet these requirements.

Ground Water - Alternative 4 includes ground water extraction, treatment and disposal. That disposal would be regulated by National Pollution Discharge Elimination System Permit Regulations (40 CFR 122 and 125), the Water Quality Effluent Limitations section of the Clean Water Act (40 CFR 131), and 35 IAC Parts 304 and 309. Sampling and analysis associated with discharge to a surface water body are found in 40 CFR 136.

Monitoring - All monitoring of leachate, landfill gas and ground water would be completed under Illinois Administrative Code 35 for Post-Closure Regulations (35 IAC 807 and 811). Alternatives 2, 3 and 4 would meet these ARARs.

Alternatives 3 and 4 are the only Alternatives to successfully meet all of the threshold criteria. Therefore, Alternatives 1 and 2 will not be subjected to the following primary balancing criteria.

B. PRIMARY BALANCING CRITERIA

3. LONG-TERM EFFECTIVENESS AND PERMANENCE

Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedial action to maintain reliable protection of human health and the environment over time, once cleanup levels have been met. The effectiveness of the remedy would also be tracked by long-term monitoring. Pursuant to the NCP, Five-Year Reviews would be conducted to determine if the remedy is effectively reducing contaminant concentrations, if the effective limit of the remedy has been reached, or if additional actions are needed.

A. Magnitude of Residual Risk

Alternative 3

Residual risks left by Alternative 3 would be reduced lower than those calculated in the Baseline Risk Assessment and Ecological Assessment. The continued operation of the leachate extraction system would reduce the potential risks associated with high leachate volume and elevations in proportion to the resultant decrease in leachate volume, elevations and chemical concentrations. The magnitude of these reductions will be dependent on the recoverability of the leachate from the landfill interior.

The existing passive landfill gas venting system would continue to relieve buildup of gas within the landfill. The volume of gas would decrease as the refuse in the landfill stabilizes, reducing the risk associated with fracturing of the existing cap and generation of future leachate.

The entire remedy would be subject to a Five-Year Review. Additionally, a one year (or more often) critical review of the leachate extraction system would be completed. This review would consist of evaluating the effectiveness of leachate extraction to lower the leachate heads in existing leachate wells and reduce the volume of leachate contained in the landfill. Ground water monitoring data would document whether leachate extraction results in a corresponding decrease in ground water contaminant concentrations. Depending upon the results of this analysis and the number of wells that go dry, an additional 9 leachate extraction wells may be installed and operated.

Landfill gas and volume and discharge calculations will be completed to determine if the system should be upgraded from passive to active gas removal. Contaminant concentrations will also be gathered to determine

whether on-Site thermal treatment is required.

A baseline Monitored Natural Attenuation Study will be completed, including projected cleanup times. Actual data would be periodically evaluated against projected data to determine if ground water will be restored to its beneficial use in a reasonable amount of time. The accumulated database from ground water monitoring would be evaluated to assess the on-going ground water quality downgradient of the landfill. The Monitored Natural Attenuation of ground water may include varying combinations of biodegradation, abiotic transformations, intrinsic bioremediation, dilution, dispersion and adsorption of ground water contaminants. Preliminary analytical data strongly support the projected success of MNA to meet cleanup goals in a reasonable amount of time. Order of magnitude decreases in ground water contaminants have been documented from 1992 sampling compared to the results of the 1997/98 data. It is reasonably expected that once the other components of the remedy have been in place for a while, significant additional improvements in ground water quality will be realized. The concentrations of contaminants in ground water concentration will continue to decrease by natural attenuation/dilution processes and also because contaminant loading will be decreased as leachate volume and pressure head are reduced by the leachate collection system. Since most of the ground water contaminants that exist at the Site are already at low concentrations, it is likely that only minimal reduction of actual contaminant mass would occur initially in ground water.

Alternative 4

Residual risks left by Alternative 4 would also be reduced lower than those calculated in the Baseline Risk Assessment and Ecological Assessment.

Alternative 4 is identical to Alternative 3 but replaces the Monitored Natural Attenuation ground water component with a ground water extraction, treatment, and discharge system. All other components are the same and result in a similar residual risk. If treated ground water is discharged to surface water or the sewer and regulatory levels would be met. Again because of the low ground water contaminant concentrations, even very large volume removals of ground water for treatment would only result in a minimal removal of the mass of contaminants.

B. Adequacy and Reliability of Controls

FPD ownership of the property is an adequate and reliable control for the Site. The landfill is maintained by FPD personnel. The possibility of residential or commercial development is eliminated by FPD ownership, since the FPD lacks the authority to sell any portion of the Forest Preserve to a private party.

Leachate extraction and treatment is a well developed remedial technology. The volume and sustainable yield of leachate at the landfill would be identified through extended pumping of the landfill extraction wells. Both Alternatives 3 and 4 include critical analyses and contingencies in the event augmentation is required. The FPD would manage the system and would utilize local contractors, suppliers, and FPD personnel for system monitoring, operation, and maintenance. The Wheaton Sanitary District POTW is currently being utilized to treat the collected leachate under an existing pretreatment permit. It is not anticipated that major elements of the system would require replacement. Submersible pumps placed in the leachate wells may require periodic maintenance to ensure adequate performance.

Passive landfill gas venting exists at the Site. Passive landfill gas venting is widely used and has proven to be an adequate and reliable means to limit landfill gas build-up and problems associated with landfill gas accumulation. The venting system is mechanically simple to operate and maintain. Both Alternatives 3 and 4 have a contingency for transition from passive to active treatment and the addition of gas vents. These are activities that have been successfully completed at numerous sites, and there are a number of proven technologies for active gas collection and on-Site treatment.

Alternative 3 includes ground water Monitored Natural Attenuation. The science behind this technology is rapidly expanding and becoming more well defined. Monitored Natural Attenuation has been successfully applied to a wide range of contaminants in a ever-expanding universe of Site-specific conditions. For Monitored Natural Attenuation, there are no specialized field engineered systems that require maintenance or operation.

Alternative 4 includes ground water extraction and treatment, which is a well developed and widely utilized remedial technology. Because of the number of wells and the high pumping rate that would be required to achieve hydraulic control in the permeable outwash deposits. long-term management and maintenance of the system would be required. However, this is a technology with proven reliability.

4. Reduction of Toxicity, Mobility, or Volume Through Treatment

This criterion considers factors such as: the treatment process used and the material treated; the amount of hazardous material destroyed or treated; the reduction in toxicity, mobility, or volume through treatment; the irreversibility of the treatment; the type and quantity of treatment residuals; and the reduction of inherent hazards. These factors are considered where appropriate.

A. Treatment Process Used and Materials Treated

Leachate - Both Alternatives 3 and 4 include extraction and collection of leachate at the landfill, followed by off-Site treatment of the extracted leachate to remove inorganics and destroy organics. Treatment of the extracted leachate would be off-Site at the Wheaton Sanitary District POTW. The metals in the leachate are treated through precipitation; semivolatiles and volatiles are biologically treated.

Landfill Gas - Both Alternatives 3 and 4 include possible augmentation from passive venting of landfill gas to active collection and on-Site treatment of landfill gas. Thermal treatment is a destructive technology that would be used on-Site. This technology uses flame to thermally treat the gases and has an efficiency of 85% or greater.

Ground Water - Alternatives 3 and 4 both provide treatment components for ground water. Alternative 3 relies on natural physical, chemical, and biological processes such as aerobic and anaerobic degradation, dilution, adsorption, and advection to remediate ground water. Alternative 4 uses engineered systems to chemically precipitate and physically strip contaminants from ground water. Both Alternatives are designed to meet regulatory standards in a reasonable amount of time.

B. Amount of Contaminated Materials Destroyed or Treated

The volume of leachate in the landfill may be as high as 50-70 million gallons, and as much as 9,500 gallons per day of leachate may be generated by infiltrating precipitation. Although there are a number of uncertainties associated with these conservative estimates, the leachate extraction program under both Alternative 3 and Alternative 4 will reduce the volume of contaminated leachate at the Site. Depending on the accuracy of the volume estimates and sustainable yield of leachate, some portion or a majority of this material may be collected at the Site and treated at the POTW.

C. Degree of Expected Reductions in Toxicity, Mobility, or Volume

Extraction, collection, and treatment of leachate from the landfill would result in reduction of leachate toxicity for both Alternatives 3 and 4. The actual effect of a leachate extraction system on the reduction of toxicity, mobility, and volume would be determined by measuring sustainable leachate yields during pumping, and monitoring leachate heads in the landfill to develop reliable estimates of leachate volume.

Removal of leachate from the landfill would decrease the mobility of the landfill leachate by reducing the hydraulic head potentially present at the landfill base. Use of submersible pumps in the leachate extraction wells would provide hydraulic control of leachate migration and mobilize leachate contaminants towards the collection wells. The volume of leachate present in the landfill would be reduced by extraction, provided the extraction system could produce an effluent flow rate greater than the rate of infiltration through the landfill cap. Both Alternatives utilize technologies that have been proven to effectively reduce contaminant toxicity, mobility and volume.

Alternatives 3 and 4 include the existing passive landfill gas venting system to continue to relieve buildup of gas within the landfill. The volume of gas within the landfill would decrease as the refuse in the landfill stabilizes, reducing the risk associated with fracturing of the existing cap and generation of future leachate. Alternatives 3 and 4 also contain contingent transition from passive to active landfill gas extraction and on-Site destructive thermal treatment. These contingencies would result in larger volumes of gas being removed and a destructive technology being applied. Both Alternatives utilize technologies that have been proven to effectively reduce contaminant toxicity, mobility and volume.

Alternatives 3 and 4 also both have a ground water component with a remedial goal of meeting regulatory standards in a reasonable amount of time. Alternative 3 relies on natural processes where Alternative 4 requires engineered systems such as on-Site pumping, active treatment and discharge. Both Alternatives are based on technologies that have been proven to effectively reduce contaminant toxicity, mobility and volume.

D. Degree to Which Treatment is Irreversible

Leachate extraction and off-Site disposal and treatment would irreversibly reduce the volume of leachate present in the landfill. The concentrations would be reduced by removal of concentrated leachate that accumulated in the landfill during construction and operation of the landfill. Leachate generated by recent infiltration of rain water could have a lower contaminant concentration, thereby reducing the overall toxicity of the leachate. Contaminants present in the extracted leachate would be irreversibly destroyed or removed from the water by off-Site treatment at the Wheaton Sanitary District POTW.

Landfill gas would be irreversibly treated under the contingencies of Alternatives 3 and 4. Thermal treatment is destructive to efficiencies greater than 85%.

The ground water components for Alternatives 3 and 4 would irreversibly reduce the volume of contaminants present in ground water at the Site. Alternative 3 utilizes natural processes while Alternative 4 relies on engineered practices. Both Alternatives provide irreversible treatment.

E. Type and Quantity of Residuals Remaining After Treatment

Any residuals associated with leachate treatment at the Wheaton Sanitary District POTW would be mixed with non-Site related residuals associated with routine operation of the treatment plant. These residuals would be disposed of according to the POTW permitting requirements.

The landfill gas thermal treatment would result in residual air emissions. The technology is largely destructive, but there would be residual gas emissions. These residual emission must be below regulatory levels.

Alternative 3 has no ground water residuals after treatment. Ground water treatment under Alternative 4 may result in off-Site disposal of metal residuals from a precipitate and discharge of treated water either to on-Site surface water or the POTW.

F. Reduction of Inherent Hazards

Alternatives 3 and 4 would equally reduce inherent hazards posed by high leachate volumes and heads in the landfill by leachate extraction and treatment. Alternatives 3 and 4 further reduce the mobility and volume of leachate and landfill gas by maintaining the integrity of the cap. A correctly functioning cap will significantly reduce the amount of infiltration that moves contaminants into leachate and ultimately migrates to ground water. A reduction in infiltration will also directly result in a reduction in the volume of leachate to be extracted and treated.

Alternatives 3 and 4 would equally reduce inherent hazards posed by landfill gas through passive gas management. Depending upon the volumes and concentrations of gas, further reductions of inherent hazards may occur through active collection and thermal treatment.

Alternatives 3 and 4 would equally reduce inherent hazards posed by ground water.

5. SHORT-TERM EFFECTIVENESS

Short-term effectiveness addresses the potential adverse effects that implementation of a remedial action may cause, considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents and the environment during implementation.

A. Risks to Community During Remedial Actions

Alternatives 3 and 4 pose only minor risks to the community from truck traffic required for transport of the leachate for treatment.

B. Risks to Workers During Remedial Actions

There is a minor risk for workers during the transfer of leachate from the containment tank to the trucks for transport to the treatment system under both Alternatives 3 and 4. These risks can be minimized by following the Site Safety Plan, using the proper safety gear, proper maintenance, and the use of standard operating procedures.

Workers performing sampling activities as part of implementing monitoring would incur potential risk through exposure to chemicals in the ground water, leachate, and landfill gas. This risk would be minimized through

the use of safety procedures and personal protective equipment.

Alternative 4 may present minor risk for workers during the construction, operation and monitoring of the pump-and-treat system. This risk would be minimized through the use of safety procedures and personal protective equipment.

C. Environmental Impacts

Implementation of either Alternative 3 or 4 is not anticipated to pose additional risk to the environment.

D. Time Until Remedial Action Objectives are Achieved

The Remedial Action Objective for leachate is reducing the volume of leachate which could have the potential to release to ground water. The time needed to achieve the Remedial Action Objective to reduce leachate volume would be dependent on the actual volume present in the landfill and the sustainable yield of leachate recovery. It is anticipated that leachate will be required to be removed in the long-term (longer than 30 years).

Landfill gas management will also be required in the long-term (greater than 30 years) due to the potential for damage to the cap.

Ground water Remedial Action Objectives are currently not being met on only a relatively small portion of the Site. The exact time to meet regulatory standards would be estimated through completion of a Monitored Natural Attenuation Study (Alternative 3) or in a ground water pump-and treat system design (Alternative 4). A reasonable time frame for ground water clean up may be 30 years. Off-Site migration of ground water contaminants is not occurring at the Site.

6. IMPLEMENTABILITY

Implementability addresses the technical and administrative feasibility of a remedial action, including the availability of services and materials and services needed to implement a particular option.

All Alternatives are expected to be technically feasible and administratively implementable.

A. Technical Feasibility

Leachate extraction, transport, and off-Site disposal is the same for both Alternatives 3 and 4. Operation of the leachate extraction technology is well developed and an extraction system has been operational. The degree of success of such a recovery system varies because of the changes in the total volume of leachate and the availability of that leachate for extraction. The feasibility of recovering significant portions of leachate from this Site would be evaluated through the first critical evaluation and continued operation of the extraction system. Contingent augmentation is equivalently feasible.

The passive landfill gas venting system is in place and functioning. Implementing additional venting through new leachate extraction wells would be technically feasible. Contingent augmentation for either Alternative 3 or 4 would use standard equipment and procedures and is also technically feasible.

Procedures for conducting Monitored Natural Attenuation of Ground Water under Alternative 3 are readily implementable, well developed, and have proven reliability. Ground water extraction technologies are well developed for Alternative 4, and construction of the treatment system is technically feasible. The technologies of metal precipitation and air stripping would need to be sized accordingly, but there is standard equipment and procedures for designing systems.

B. Administrative Feasibility

The ongoing leachate extraction and disposal component of both Alternatives are administratively feasible. The existing pretreatment permit with the Wheaton Sanitary District POTW may need to be maintained for on-going off-Site disposal of leachate for both Alternatives 3 and 4.

C. Availability of Services and Materials

The materials, services, and equipment required to implement both Alternatives 3 and 4 are readily available.

7. Cost

Cost includes estimated capital and operation and maintenance costs for a remedial action.

Alternative 1

No Cost

Alternative 2 -- Long-Term Leachate Extraction and Off-Site Disposal; Contingent Augmentation of the Leachate and Landfill Gas Systems; Long-term O&M for all Existing Components, and Long-term Monitoring

Estimated Costs:

Capital Costs:

Contingent Leachate System	\$270,000
Contingent Gas	\$ 20,000
CONTINGENT CAPITAL COSTS	\$290,000

Operation and Maintenance Costs:

Leachate O&M	\$ 94,000
Cap O&M	\$ 2,400
Landfill Gas O&M	\$ 3,600
Monitoring	\$299,000
ANNUAL O&M	\$399,000

NET PRESENT WORTH	(29 years at 7%)	\$5,739,000
	(29 years at 3%)	\$8,497,000

Capital Costs The capital costs for the contingencies are estimated to be \$290,000. This includes \$270,000 for additional leachate and \$20,000 for contingent gas collection and treatment.

Operation and Maintenance - Operation and maintenance costs would be those incurred from operating the leachate recovery system, including power, mechanical systems upkeep, and periodic replacement (e.g., lubrication, repair, etc.), heating, and preheating (if appropriate). Operation and maintenance costs would also be incurred for ground water quality monitoring, leachate head monitoring and characterization. The annual O&M cost for Alternative 2 is estimated to be \$399,000, with the largest cost going to monitoring. It is assumed that the leachate extraction system would be operated for greater than 30 years.

Alternative 3 - Long-term Leachate Extraction and Off-Site Disposal; Contingent Augmentation of the Leachate System and Landfill Gas Systems, Long-term O&M for all Existing Components; Long-term Monitoring, and Monitored Natural Attenuation for Ground Water

Estimated Costs:

Capital Costs:

Contingent Leachate System	\$270,000
Contingent Gas	\$ 20,000
CONTINGENT CAPITAL COSTS	\$290,000

Operation and Maintenance Costs:

Leachate O&M	\$ 94,000
Cap O&M	\$ 2,400
Landfill Gas O&M	\$ 3,600
Monitoring	\$299,000
ANNUAL O&M	\$399,000

Monitored Natural Attenuation Costs:

Baseline Study	\$ 55,000
Additional Monitoring	\$ 25,000
TOTAL MNA COST	\$ 80,000

NET PRESENT WORTH	(29 years at 7%)	\$5,819,000
-------------------	------------------	-------------

(29 years at 3%) \$8,577,000

Capital Costs The capital costs for the contingencies are estimated to be \$290,000. This includes \$270,000 for additional the leachate system and \$20,000 for contingent gas collection and treatment.

Operation and Maintenance - Operation and maintenance costs would be the same as Alternative 2 and include costs incurred from operating the leachate recovery system, including power, mechanical systems upkeep, and periodic replacement (e.g., lubrication, repair etc.), heating, and preheating (if appropriate). Operation and maintenance costs would also be incurred for ground water quality monitoring, leachate head monitoring and characterization. The annual O&M cost for Alternative 3 is the same as Alternative 2 and is estimated to be \$399,000, with the largest cost going to monitoring. It is assumed that the leachate extraction system would be operated for greater than 30 years.

Ground Water - The ground water component in Alternative 3 includes Monitored Natural Attenuation. The baseline study includes sampling for multiple parameters that are not included in routine monitoring and complex fate and transport modeling. The baseline study is estimated to cost \$55,000. Monitored Natural Attenuation also may include additional rounds of sampling to illustrate progress toward restoring ground water to its beneficial use in a reasonable amount of time. These additional sample requirements are estimated to cost \$25,000.

Alternative 4 - Long-term Leachate Extraction and Off-Site Disposal; Contingent Augmentation of the Leachate System and Landfill Gas Systems; Long-term O&M for all Existing Components; Long-term Monitoring, and Ground Water Extraction and Treatment Construction/Operation.

Estimated Costs:

Capital Costs:		
Contingent Leachate System	\$270,000	
Contingent Gas	\$ 20,000	
CONTINGENT CAPITAL COSTS	\$290,000	
Ground Water Pump and Treat Construction Cost	\$726,000	
TOTAL CAPITAL COST	\$1,016,000	
Operation and Maintenance Costs:		
Leachate O&M	\$ 94,000	
Cap O&M	\$ 2,400	
Landfill Gas O&M	\$ 3,600	
Monitoring	\$299,000	
Ground Water	\$ 83,000	
ANNUAL O&M	\$482,000	
NET PRESENT WORTH (29 years at 7%)	\$7,553,813	
(29 years at 3%)	\$10,923,813	

Capital Costs The capital costs for the contingencies are estimated to be \$290,000. This includes \$270,000 for additional leachate and \$20,000 for contingent gas collection and treatment, similar to Alternatives 2 and 3.

Ground Water - The ground water component in Alternative 4 includes installation of ground water pump-and-treat system. The capital costs for this system are estimated at \$726,000.

Operation and Maintenance - O&M costs would be similar to Alternatives 2 and 3. However, there would be additional costs for O&M of the ground water system. The additional annual O&M for ground water treatment is \$83,000.

C. MODIFYING CRITERIA

8. STATE ACCEPTANCE

State acceptance indicates whether, based on its review of the RI/FS and Proposed Plan, the State of Illinois

concur, opposes, or has no comment on the selected remedial action.

The State of Illinois has expressed a willingness to concur with the selected remedy. The letter of concurrence will be added to the Administrative Record for this Site.

9. COMMUNITY ACCEPTANCE

Community acceptance addresses the community's acceptance of the preferred Alternative presented in the Proposed Plan based on comments received during the public comment period. The Responsiveness Summary, attached to this ROD, contains the significant comments received during the public comment period and the U.S. EPA's responses to those comments.

IX. THE SELECTED REMEDY

The U.S. EPA has selected Alternative 3 for the final remediation of the DuPage County Landfill Superfund Site.

Alternative 3 includes:

- long-term institutional controls;
- long-term operation and maintenance of the improved landfill cap;
- long-term leachate extraction with possible augmentation of 9 additional wells;
- long-term off-Site leachate treatment and disposal;
- long-term passive landfill gas collection with possible augmentation to active with a flare;
- Monitored Natural Attenuation for ground water ; and
- long-term ground water, leachate, landfill gas monitoring.

Estimated Costs:

Capital Costs:

Contingent Leachate System	\$270,000
Contingent Gas	\$ 20,000
CONTINGENT CAPITAL COSTS	\$290,000

Operation and Maintenance Costs:

Leachate O&M	\$ 94,000
Cap O&M	\$ 2,400
Landfill Gas O&M	\$ 3,600
Monitoring	\$299,000
ANNUAL O&M	\$399,000

Monitored Natural Attenuation Costs:

Baseline Study	\$ 55,000
Additional Monitoring	\$ 25,000
TOTAL MNA COST	\$ 80,000

NET PRESENT WORTH (29 years at 7%)	\$5,819,000
(29 years at 3%)	\$8,577,000

The long-term institutional controls (deed restrictions, erosion/flood control) and operation and maintenance of the cap (inspections, improvements, etc.) will begin immediately and extend for the long-term (greater than 30 years). These components of the remedy will ensure that land use changes or on-site construction is not completed in a way that may present an exposure risk or would negatively impact the remedy. Specifically, the deed restrictions bars future development of the Site and bars ground water use. The cap will eliminate possible direct exposure to leachate, landfill gas, or other waste material. Also, the cap will result in a significant reduction in the long-term generation of leachate.

The selected remedy will address the main source of mobile contamination by the extraction and off-Site treatment of leachate from the landfill for the long-term (greater than 30 years). Extraction of leachate and maintenance of the cap will be ongoing responsibilities. Treatment and disposal of the leachate will be conducted off-Site in the long-term.

Landfill gas will also be addressed in the long-term (greater than 30 years) due to the ongoing threat of gas build-up damaging the cap. Landfill gas will be addressed to minimize exposure and the threat of migration to ground water. Landfill gases will be managed to allow future recreational use of Mt. Hoy for the long-term.

The recommended Alternative may or may not require additional design and construction of the contingent components. The first critical evaluation will be completed after one year of operation. If augmentation is required, it would be completed in about 3.5 years.

Ground water contamination should continue to decrease dramatically and result in achieving cleanup levels in less than the estimated 30 years. A detailed analysis of the ground water projections will be completed during the first phase of the Monitored Natural Attenuation Remedy Study. The Monitored Natural Attenuation of ground water may include varying combinations of biodegradation, abiotic transformations, intrinsic bioremediation, dilution, dispersion and adsorption of ground water contaminants. Preliminary analytical data strongly support the projected success of MNA to meet cleanup goals in a reasonable amount of time. Order of magnitude decreases in ground water contaminants have been documented from 1992 sampling compared to the results of the 1997/98 data. It is reasonably expected that once the other components of the remedy have been in place for a while, significant additional improvements in ground water quality will be realized. Based on existing data, it appears that ground water quality has made significant improvement, such that regulatory standards may be met well in advance of 30 Years. Additionally, contamination significantly above background levels is not migrating off-Site.

Monitoring is an essential part of this remedy. A monitoring network will be established on the Site that includes leachate, landfill gas, and ground water. Monitoring will serve two purposes: 1) evaluate the effectiveness of the treatment/containment components or the remedy to reduce risks, and 2) monitor for changes in potential migration of contaminated media from the Site. If monitoring identifies that contamination is not decreasing or being managed appropriately and/or cleanup levels are not being achieved, the remedy will be re-evaluated.

Cleanup levels to be achieved by the selected remedial action will be chemical-specific ARARs. If multiple contaminants are present in the media (i.e. ground water), and cleanup of individual contaminants to ARARs result in a cumulative risk in excess of 10^{-6} across a media, cleanup levels of contaminants will be risk-based and cumulative across a media to 10^{-6} or less. If chemical-specific ARARs do not exist for contaminants, cleanup levels of contaminants will be risk-based and cumulative across a media to 10^{-6} or less.

The point of compliance for ground water cleanup levels will be the landfill boundary. Ground water will meet the U.S. EPA primary MCLs and EPA 620 Standards outside of the landfill footprint. All on-Site ground water that does not currently meet these standards will be placed in a ground water management zone and remediated using Monitored Natural Attenuation. On-Site ground water will be managed as a IAC 620 Groundwater Management Zone until the standards or background concentrations are met.

The point of compliance for cleanup levels of landfill gas emissions shall be sampling at the top of the Mt. Hoy and the landfill boundary. These are areas of potential landfill gas emissions and areas of recreational use. The air standards for recreational users is 10^{-6} and a hazard index less than 1.

The selected remedial action is expected to be the final response for the Site. Because this remedial action will result in hazardous substances remaining on-Site, a review will be conducted within five years after commencement of remedial action to ensure that the remedial action continues to provide adequate protection of human health and the environment.

X. STATUTORY DETERMINATIONS

U.S. EPA's primary responsibility at Superfund sites is to select and implement remedial actions that achieve adequate protection of human health and the environment. Section 121 of CERCLA establishes several statutory requirements and preferences. When complete, a remedy selected by U.S. EPA must comply with ARARs under federal and state environmental laws (unless a statutory waiver is justified). The selected remedy must also be cost effective and utilize permanent solutions and alternative treatment or resource recovery to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatment processes that permanently and significantly reduce the toxicity, mobility, or volume of hazardous substances, pollutants, and contaminants. The U.S. EPA believes that Alternative 3 meets the threshold criteria and provides the best protection with respect to the criteria used to evaluate the alternatives (National Contingency Plan 40 CFR Part 300.430(f)(5)(ii)(A-F)). The implementation of the selected remedy at the Site satisfies these requirements and preferences as follows:

A. Protection of Human Health and the Environment

The selected remedy will protect human health and the environment by utilizing institutional controls to reduce risks. Specific actions include fencing portions of the Site and posting warning signs and imposing deed restrictions on the landfill property. The risks posed by inhalation of landfill gases are reduced by collecting and treating landfill gases, if necessary. The potential for direct exposure to leachate will be addressed through the cap and leachate extraction and off-Site treatment.

The ground water will be actively addressed through Monitored Natural Attenuation. In addition to Monitored Natural Attenuation, the interaction of several components of Alternative 3 will assist in decreasing ground water contamination and achieve cleanup levels. The repaired landfill cap will reduce infiltration of precipitation into the landfill, thereby reducing generation of leachate, and will also reduce the percolation of leachate from the landfill into ground water. Extraction and treatment of leachate from the landfill will address the primary source of ground water contamination. Management of landfill gas will also minimize the threat of gas migrating to ground water.

Cleanup levels to be achieved by the selected remedial action will be chemical-specific ARARs. If multiple contaminants are present in the media (i.e. ground water), and cleanup of individual contaminants to ARARs result in a cumulative risk in excess of 10^{-6} across a media, cleanup levels of contaminants will be risk-based and cumulative across a media to 10^{-6} or less. If chemical-specific ARARs do not exist for contaminants, cleanup levels of contaminants will be risk-based and cumulative across a media to 10^{-6} or less.

Long-term monitoring will be conducted to ensure the effectiveness of the remedy.

B. Attainment of ARARs

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State environmental or facility siting law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. Relevant and Appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State environmental or facility siting law that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to this particular Site.

Compliance with ARARs addresses whether a remedial action will meet all requirements of federal and state environmental laws and regulations and/or provide a basis for a waiver from any of these laws. Federal and State ARARs are divided into three categories: chemical-specific, action-specific, and location-specific. Alternative 3 will meet or attain all Federal or State ARARs and will be implemented in a manner consistent with those laws. It is important to note that on-Site actions are required to comply with ARARs, but must comply only with the substantive parts of the ARAR. Off-Site actions must comply only with applicable requirements, but must comply fully with both substantive and administrative requirements. The selected remedy will meet all ARARs under federal and more stringent state environmental laws. A list of ARARs for the Site is contained in Tables 9, 10 and 11. The primary ARARs that will be achieved by the selected remedy are:

1. Chemical-Specific ARARs

Chemical specific ARARs regulate the release to the environment of specific substances having chemical characteristics. Chemical-specific ARARs typically determine the extent of clean-up at a Site. For this Site, these are:

a. Federal Chemical-Specific ARARs

Chemical-specific ARARs include those laws and requirements that regulate the release of contaminants to the environment. These include:

Safe Drinking Water Act, 40 CFR 141.61 (organic) and 141.62 (inorganic) Maximum Contaminant Levels (MCLs)

and, to a certain extent, 40 CFR 141.50 (organic) and 141.51 (inorganic) non-zero Maximum Contaminant Level Goals (MCLGs). The Federal Drinking Water Standards promulgated under the Safe Drinking Water Act (SDWA) are applicable to municipal drinking water supplies servicing 25 or more people. MCLGs are relevant and appropriate when the standard is set at a level greater than zero (for non-carcinogens), otherwise, MCLs are relevant and appropriate. At the Site, MCLs and MCLGs are relevant and appropriate. The point of compliance for the Federal drinking water standards is at the boundary of the landfill.

Clean Air Act (40 CFR Part 50) - The Clean Air Act requirements include the TSP standard for air discharges. This requirement is applicable to the Site because the gas extraction and treatment, leachate treatment, and various other treatment methods which are part of this remedy are potential sources of fugitive dust, particulates, and/or VOCs.

b. State Chemical-Specific ARARs

Illinois Administrative Code Class I Potable Resource Ground Water Quality Standards listed in 35 IAC 620.410 apply to ground water. For Alternative 3, until compliance with the standards of IAC 620.410 are achieved, ground water would be managed as a Groundwater Management Zone under IAC 620.450.

Illinois Administrative Code for landfills. The chemical-specific air requirements are contained in 35 IAC Section 243 limits emissions of photochemically reactive organic material (e.g., VOCs) to less than 8 pounds per hour. The system is currently operating below that amount. Should augmentation be required in Alternative 3 that result in greater than 8 pounds per hour, controls to reduce emissions may be required.

2. Location -Specific ARARs

Location-specific ARARs are those requirements that relate to the geographic position (if the Site. For the Site, these are:

a. Federal Location-Specific ARARs

Floodplain Management Executive Order 11988, 40 CFR 6, Appendix A, Section 6(a)(5) - This order requires minimization of potential harm to or within flood plains and the avoidance of long- and short-term adverse impacts associated with the occupancy and modification of flood plains. This order is applicable to the Site since it is located within a flood plain and additional work may be required. Alternative 3 would meet this ARAR.

Wetland Management Executive Order 11990 - This order requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands. This requirement is applicable to the Site since there are wetlands located on the Site and additional contingent work may be required. Alternative 3 would meet this ARAR.

Clean Water Act 40 CFR 230.70-230.77 - Requires actions to minimize adverse effects of dredged or fill materials. Alternative 3 would meet this ARAR.

Fish and Wildlife Coordination Act - Requires Federal agencies to take action to protect fish and wildlife resources that may be affected by stream or body of water modifications. Alternative 3 would meet this ARAR.

b. State Location-Specific ARARs

Location-specific ARARs are those requirements that relate to the geographical location of a Site. State location-specific ARARs identified for this action are:

35 IAC 811 and 35 IAC 724 100-Year Floodplain requirements - A facility shall not restrict the flow of a 100-year flood, result in washout of solid waste from a 100-year flood, or reduce the temporary water storage capacity of the 100-year floodplain. A facility located in a 100-year floodplain must be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood. Alternative 3 meets this ARAR.

92 IAC Part 708 Construction and Filling Requirements - Governs construction and filling in the regulatory floodway of rivers, lakes, and streams of Cook, DuPage, Kane, Lake, McHenry, and Will Counties, excluding the City of Chicago. Alternative 3 meets this ARAR.

3. Action-Specific ARARs

a. Federal Action-Specific ARARS

OSHA 29 CFR Safety Standards - Construction activities included in Alternative 3 would be subject to standards found in 29 CFR 1910 and 29 CFR 1926. Threshold limit values would be monitored in the breathing zone during construction activities. Alternative 3 would meet this ARAR.

Clean Air Act and Emission Limitations, CAA Section 112, 40 CFR 61.12-14. Requires that emissions of hazardous pollutants do not exceed levels expected from sources in compliance with hazardous air pollution regulations. These requirements relate to air quality and emission limitations for landfill gas. Alternative 3 would meet this ARAR.

40 CFR 122 and 125, the National Pollution Discharge Elimination System Permit Regulations and 40 CFR 131 the Water Quality Effluent Limitations sections applies to the off-Site treatment and disposal of leachate. Alternative 3 would meet these ARARS.

b. State Action-Specific ARARS

35 IAC 807 and 811 Post-Closure Care - Establishes minimum requirements for maintenance and inspection of final cover and vegetation and establishes minimum requirements for ground water and landfill gas monitoring. Alternative 3 would meet these ARARS.

35 IAC 811 206, 308 and 309 Post-Closure Care for Leachate Treatment, Storage and Disposal - These regulations deal with the leachate sampling, leachate collection, leachate storage and the extracted leachate that would be treated off-Site by a POTW under an existing permit. Alternative 3 would meet these ARARS. Augmentation of the leachate system would also meet 35 IAC 811.309 system design requirements.

35 IAC 807 and 811 Post-Closure Care for Landfill Gas - These regulations deal with monitoring landfill gas. 35 IAC 218 deals with ongoing landfill gas emissions. Alternative 3 would meet these ARARS. If augmentation including on-Site construction of a thermal treatment device is completed, it would be done so that it is in compliance with Illinois Administrative Code for construction of Landfill Gas Systems (35 IAC 811.310 and 311). The augmentation would also trigger sampling under 35 IAC 221-218 and compliance with the Clean Air Act, Section 112, 40 CFR 61.12-14. If augmentation is required, the system would be designed to meet these requirements.

4. To Be Considered

No To Be Considered criteria were found.

C. Cost Effectiveness

The U.S. EPA believes that the selected remedial action is cost-effective in mitigating the risks posed by the Site contaminants within a reasonable period of time. Section 300.430(f)(ii)(D) of the NCP requires that EPA evaluate cost-effectiveness by comparing all the alternatives which meet the threshold criteria of protection of human health and the environment against three additional balancing criteria: long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; and short-term effectiveness. The selected remedial action meets these three criteria and provides overall effectiveness in proportion to its cost. The estimated cost for the selected remedial action is \$290,000 in contingent capital cost, \$399,000 in annual O&M and \$80,000 in ground water Monitored Natural Attenuation cost, which is a reasonable value for the results expected to be achieved by the selected remedial action. The Net Present Value for Alternative 3 for 29 years at the 7% discount rate is \$5,819,000. The U.S. EPA believes the selected remedy is the most cost-effective remedy that also achieves ARARS and satisfies the other criteria of the NCP and Section 121 of CERCLA.

D. Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

U.S. EPA has determined that the selected remedy represents the maximum extent to which permanent solutions can be utilized in the most cost-effective manner to eliminate exposure to contaminated soil at the Site and prevent the continued migration of contaminants into the ground water. Of the alternatives that are protective of human health and the environment and comply with ARARS, U.S. EPA has determined that the selected Alternative provides the best balance in terms of long-term effectiveness and permanence, reduction in toxicity, mobility or volume through treatment, short-term effectiveness, implementability, cost and

consideration of state and community acceptance.

The criterion of overall protection of human health and the environment and long-term effectiveness and permanence were crucial in the decision to select Alternative 3. Overall protection of human health and the environment was best achieved by the selected remedial action because it provides protection of human health from risks through institutional controls and cap maintenance to eliminate the direct exposure pathway, collection and off-Site treatment and disposal of leachate. The threat of exposure to landfill gas and damage to the cap is managed by the landfill gas system, and ground water is addressed through Monitored Natural Attenuation. By treating leachate, collecting landfill gas, and minimizing infiltration, ground water contamination will decrease, cleanup levels will be achieved, and the continued migration of leachate and contaminated ground water is reduced.

Long-term effectiveness and permanence was best achieved by the selected remedial action due to leachate and ground water treatment components. Leachate in the landfill will be extracted and treated to reduce residual risks in ground water. The ground water in the shallow aquifer beneath and adjacent to the landfill will be cleaned up through Monitored Natural Attenuation. U.S. EPA believes that Monitored Natural Attenuation can achieve cleanup standards in a time that is comparable to pump-and-treat, is equally as protective as pump-and-treat, is far less costly (\$5,819,000 Net Present Worth for Alternative 3 versus \$7,553,813 for Alternative 4), and is more easily implemented.

The State of Illinois has expressed a willingness to concur with the selected remedy. The letter of concurrence will be added to the Administrative Record for this Site. The community's comments received during the public comment period are summarized in the Responsiveness Summary, attached to this ROD, along with the U.S. EPA's response to comments.

The selected remedial action meets the statutory requirement to utilize permanent solutions and treatment technologies, to the maximum extent practicable.

E. Preference for Treatment

The selected remedial action satisfies the statutory preference for treatment as a principal element. Landfill leachate will be collected/extracted and treated off-Site. Depending upon landfill gas concentrations, landfill gas may also be thermally treated on-Site. Ground water will be treated on-Site using natural attenuation processes. The DuPage County Landfill, the low level waste source of contamination, will not be treated, but will be contained by a landfill cap.

XI. RESPONSIVENESS SUMMARY

This Responsiveness Summary has been prepared to meet the requirements of Sections 113(k)(2)(B)(iv) and 117(b) of CERCLA, as amended by SARA, which requires U.S. EPA to respond "to each of the written or oral presentations" on a Proposed Plan for remedial action. On July 8, 1998, U.S. EPA made available to the public for review and comment the FS and Proposed Plan for the final remedy at the Site. U.S. EPA received comments at the public meeting on July 12, 1998. Additional written comments were also submitted to U.S. EPA during the comment period. This Responsiveness Summary summarizes those comments and concerns expressed by the public and other interested parties in written and oral form on the recommended remedy.

Summary of Comments Received During the Public Comment Period

Comments received during the public comment period are summarized in this section. Some of the comments have been paraphrased in order to effectively summarize them in this document. For the sake of consistency and privacy, U.S. EPA has referred to all individual commenters as "he." The reader is referred to the public meeting transcript and copies of written comments submitted, all of which are contained in the Administrative Record for the Site. The Administrative Record is available for review at the information repositories.

Comment

I would want to ensure that monitoring extend beyond the limits of the current plume as long as possible, that it not be restricted just to the areas that are currently seen as troublesome but that it look at the broader picture, particularly in that southeast quadrant where the drainage down towards Spring Brook and river occurs.

Response

The U.S. EPA concurs with the comment on the necessity to sample not only in the area of known contamination but downgradient from that area. For this reason the FPD is required to submit a long-term plan to sample wells within the plume (called detection wells) and downgradient of the plume (called compliance wells). The approved monitoring plan calls for sampling thirteen (13) wells within the area of contamination (detection wells) and ten (10) wells downgradient (compliance wells) of the contamination. Four (4) of the ten (10) compliance wells were recently installed to be used in combination with the previously installed wells. These wells are placed in the very quadrant between the landfill and Spring Brook and the river identified in this comment. These wells will be sampled for the long-term.

Comment

Are there any plans to retest the wells in the vicinity when you think you have got the problem solved?

Response

There are several areas and wells to which this comment could apply so the following will respond to each. The first area of note is the detection wells located within the plume (the area where there is currently contamination). Sampling in this area will continue in the long-term, well past the time when contamination is no longer present. The FPD will be required to initially demonstrate through sampling that the contamination is being reduced within the plume. In the longer-term the FPD will be required to demonstrate through sampling that the other remedy components are working (cap, landfill gas, leachate removal). For this reason, the detection wells will be sampled, most likely, in perpetuity. The second area is the compliance wells located downgradient of the detection wells. These compliance wells will be sampled as long as contamination is detected in the detection wells, and for some period after contamination is no longer present. So for these areas, the wells will also be retested. There are also a number of additional wells on-site that are not designated as compliance or detection wells and there are private wells on the other side of Spring Brook. It is anticipated that none of these wells will be retested unless specific information identified at a later time indicates this need. Sampling of these wells is currently considered either unnecessary to monitor the extent of contamination and/or unnecessary to demonstrate the remedy's effectiveness.

XII. ADMINISTRATIVE RECORD

The Superfund Administrative Record Index for this Site is attached.

U.S. EPA ADMINISTRATIVE RECORD
REMEDIAL ACTION
DUPAGE COUNTY LANDFILL/BLACKWELL FOREST PRESERVE
DUPAGE COUNTY, ILLINOIS
UPDATE #1
05/24/95

AR

DOC#	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	12/00/94	Warzyn Inc.	U.S. EPA	Final Remedial Investigation Report: Volume 1 of 3 (Text, Tables, and Figures)	424
2	12/00/94	Warzyn Inc.	U.S. EPA	Final Remedial Investigation Report: Volume 2 of 3 (Appendices A-F)	628
3	12/00/94	Warzyn Inc.	U.S. EPA	Final Remedial Investigation Report: Volume 3 of 3 (Appendices G-Y)	469
4	12/00/94	Warzyn Inc.	U.S. EPA	Final Remedial Investigation Report: Volume 3 of 3 (Addendum 1 of 3: Attachment E)	766
5	12/00/94	Warzyn Inc.	U.S. EPA	Final Remedial Investigation Report: Volume 3 of 3 (Addendum 2 of 3: Attachment E)	734
6	12/00/94	Warzyn Inc.	U.S. EPA	Final Remedial Investigation Report: Volume 3 of 3 (Addendum 3 of 3: Attachments F-O)	744

U.S. EPA ADMINISTRATIVE RECORD
REMEDIAL ACTION
DUPAGE COUNTY LANDFILL/BLACKWELL FOREST PRESERVE
DUPAGE COUNTY, ILLINOIS
UPDATE #2
10/01/96

AR

DOC#	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	03/01/96	U.S. EPA	Forest Preserve District of DuPage County	Administrative Order by Consent w/Attached Cover Letter	62

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION
ADMINISTRATIVE RECORD
FOR
DUPAGE COUNTY LANDFILL/BLACKWELL FOREST PRESERVE LANDFILL SITE
DUPAGE COUNTY, ILLINOIS
UPDATE #3
JULY 9, 1998

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	12/28/92	Hoffman, D., Warzyn, Inc.	Lance, R., U.S. EPA	Cover Letter Forwarding the Draft Feasibility Study for the Blackwell Forest Preserve Landfill Site	1
2	01/22/93	McLane, G., PRC Environmental Management, Inc.	Lance, R., U.S. EPA	Letter re: PRC's Comments on the December 1992 Draft Feasibility Study for the Blackwell Forest Preserve Landfill Site	13
3	01/25/93	Tuggle, B., U.S. DOI/ Fish & Wildlife Service	Lance, R., U.S. EPA	Letter re: FWS's Comments on the Draft Feasibility Study for the Blackwell Forest Preserve Landfill Site	2
4	01/28/93	Marrero, J., U.S. EPA/ Air Toxics & Radiation Branch	Lance, R., U.S. EPA	Memorandum re: ATRB's Review of the Draft Feasibility Study Report for the Blackwell Forest Preserve Site	1
5	01/29/93	Kleiman, J., U.S. EPA	Lance, R., U.S. EPA	Memorandum re: RCRA's Review of the Draft Feasibility Study for ARARs for the Blackwell Forest Preserve Site	1
6	07/28/94	Warzyn Engineering	U.S. EPA	Drawing: Water Table Map for Upper Aquifer at the Backwell Forest Preserve Landfill Site	1
7	02/21/95	Kleman, J., U.S. EPA	Heaton, D., U.S. EPA	Memorandum re: RCRA's Review of the Alternative Array Document for the Blackwell Forest Preserve Landfill Site for ARARs	9
8	04/04/95	Marrero, J., U.S. EPA/ Air Toxics & Radiation Branch	Heaton, D., U.S. EPA	Memorandum re: ARARs for the Blackwell Forest Preserve Landfill Site	2
9	04/07/95	Lanham, R., IEPA	Heaton, D., U.S. EPA	Letter re: IEPA's Response to U.S. EPA's Request for Additional ARARs Information for the Blackwell Forest Preserve Landfill Site	6

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
10	07/24/95	Marrero, J., U.S. EPA/ Air Toxics & Radiation Branch	Heaton, D., U.S. EPA	Memorandum re: ATRB's Review of the Draft Feasibility Study for the Blackwell Forest Preserve Landfill Site	1
11	08/08/95	Kleiman, J., U.S. EPA	Heaton, D., U.S. EPA	Memorandum re: RCRA's Review of the Feasibility Study for the Blackwell Forest Preserve Landfill Site for ARARs	1
12	03/01/96	Muno, W., U.S. EPA	Utt, R., Forest Preserve District of DuPage County	Letter Forwarding Attached Administrative Order by Consent for the DuPage County Land- fill/Blackwell Forest Preserve Site	60
13	1997	Montgomery Watson	Addressees	Construction Progress Meeting Notes for the Period August 26 - December 3, 1997 for the Blackwell Forest Preserve Landfill Site	29
14	1997-1998	Montgomery Watson	U.S. EPA	Monthly Progress Reports for the Period October 1997 - May 1998 for the Blackwell Forest Preserve Landfill Site	53
15	01/00/97	Montgomery Watson	U.S. EPA	Technical Memorandum: Predesign Investigation for the Blackwell Forest Preserve Landfill Site	299
16	02/00/97	Montgomery Watson	U.S. EPA	Leachate Collection System Expedited Final Design: Volume 1 of 2 (Text, Tables, Figures and Appendices A-D) [Final] for the Blackwell Forest Preserve Landfill Site	201
17	02/00/97	Montgomery Watson	U.S. EPA	Leachate collection System Expedited Final Design: Volume 2 of 2 (Appendices E-G) [Final] for the Blackwell Forest Preserve Landfill Site	188
18	03/04/97	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: U.S. EPA's Comments on the Predesign Investigation Technical Memorandum for the Black- well Forest Preserve Landfill Site	3

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
19	04/10/97	Montgomery Watson	U.S. EPA	Predesign Report for the Blackwell Forest Preserve Landfill Site w/ Cover Letter	335
20	04/04/97	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage, County	Letter re: U.S. EPA/ IEPA's Comments on the February 1997 Leachate Collection System Ex- pedited Final Design Report for the Blackwell Forest Preserve Landfill Site	7
21	04/10/97	Montgomery Watson	U.S. EPA	MW's Responses to U.S. EPA's March 4, 1997 Comments on the January 1997 Predesign Investiga- tion Technical Memorandum for the Blackwell Forest Preserve Landfill Site	5
22	04/21/97	Buettner, W. & P. Vagt; Montgomery Watson	Bellot, M., U.S. EPA; et al.	FAX Transmission re: Preliminary Agenda for the April 23, 1997 Meeting Concerning the Blackwell Forest Preserve Landfill Site	2
23	04/23/97	Montgomery Watson	U.S. EPA	Tables: (1) SOW Com- pliance Project schedule, (2) Expedited Project Schedule and Drawings: (3) Preliminary Grading Plan and (4) Typical Cover Details for the Blackwell Forest Preserve Landfill Site	4
24	05/00/97	Montgomery Watson	U.S. EPA	Revised Leachate Collec- tion System Expedited Final Design: Volume 1 of 2 (Text, Tables, Figures and Appendices A-D) [Final] for the Blackwell Forest Preserve Landfill Site	217
25	05/00/97	Montgomery Watson	U.S. EPA	Revised Leachate Collec- tion System Expedited Final Design: Volume 2 of 2 (Appendices E-G) [Final] for the Blackwell Forest Preserve Landfill Site	184

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
26	05/02/97	Vagt, P. & W. Buettner; Montgomery Watson	Bellot, M., U.S. EPA	Letter re: MW's Response to U.S. EPA/IEPA's Comments on the February 1997 Leachate Collection System Expedited Design Report for the Blackwell Forest Preserve Landfill Site	13
27	05/13/97	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: U.S. EPA's Partial Approval of the Leachate Collection Sys- tems Expedited Final Design Report for the Blackwell Forest Preserve Landfill Site	1
28	05/15/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter Forwarding Attached Photographs of the North and West Stormwater Collection systems at the Blackwell Forest Preserve Landfill Site	8
29	05/20/97	Dovantzis, K., PRC Environmental Management, Inc.	Bellot, M., U.S. EPA	Letter re: PRC's Tech- Review of the May 1997 Leachate collection System Expedited Final Design Report for the	2
30	06/02/97	Montgomery Watson	U.S. EPA	Cap Repair 100% Design Report for the Blackwell Forest Preserve Landfill Site w/ Cover Letter	156
31	06/09/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter re: Boring Logs Omitted from the April 1997 Predesign Report for the Blackwell Forest Preserve Landfill Site	2
32	06/09/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter re: Manhole MH-3 Groundwater Sample Results at the Blackwell Forest Preserve Landfill Site	76
33	06/16/97	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: U.S. EPA/ IEPA's Comments on the May 1997 Final Leachate Collection System Ex- pedited Final Design Report for the Blackwell Forest Preserve Landfill Site	2

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
34	06/17/97	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District	Letter re: U.S. EPA's Conditional Approval of the June 1997 Cap Repair 100% Design Report for the Blackwell Forest Preserve Landfill Site	2
35	06/23/97	Dovantzis, K., PRC Environmental Management, Inc.	Bellot, M., U.S. EPA	Letter re: PRC's Tech- nical Review of the June 1997 Cap Repair 100 Percent Design Report for the Blackwell Forest Preserve Landfill Site	1
36	07/00/97	Montgomery Watson	U.S. EPA	Revised Predesign Report for the Blackwell Forest Preserve Landfill Site	43
37	07/03/97	Vagt, P., Montgomery Watson	Addressees	Memorandum re: the July 15, 1997 Pre-Construction Meeting for the Blackwell Forest Preserve Landfill Site	1
38	07/10/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter re: MW's Response to U.S. EPA/IEPA's June 16, 1997 Comments on the Final Leachate Collec- tion System Expedited Final Design Report for the Blackwell Forest Preserve Landfill Site	20
39	07/14/97	Van Matre, L., Chicago Tribune	Public	Newspaper Article: Waste Cleanup to be Done at Blackwell	1
40	07/25/97	Dovantzis, K., PRC Environmental Management, Inc.	Bellot, M., U.S. EPA	Letter re: PRC's Tech- nical Review of MW's July 10, 1997 Response to U.S. EPA's Comments on the Leachate Collection System Expedited Final Design Report for the Blackwell Forest Preserve Landfill Site	2
41	07/28/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter Forwarding Attached Draft Deed Restriction for the DuPage county Landfill/Blackwell Forest Preserve Site	5

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
42	08/07/97	McDonough, J. & W. Buettner; Montgomery Watson	Maki, B., DuPage County	Letter Forwarding Attached July 28, 1997 Stormwater Runoff/Erosion Control Plan for Leachate Collection System and Landfill Cap Repair for the Blackwell Forest Preserve Landfill Site	7
43	08/12/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA;	FAX Transmission re: Cancellation of August 13, 1997 Construction Progress Meeting for the Blackwell Forest Preserve Landfill Site	1
44	08/14/97	Blair, T. W. Buettner; Montgomery Watson	Bellot, M., U.S. EPA	Letter: Pre-Construction Investigation Addendum for the Blackwell Forest Preserve Landfill Site	10
45	08/19/97	Lindland, K., U.S. EPA	Mack, K., Office of Dupage County State's Attorney	Letter re: U.S. EPA's Request for Confirmation that Permits will not be Required for Work Performed at the Blackwell Forest Preserve Site	2
46	08/21/97	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: U.S. EPA/ IEPA's Review of the July 10, 1997 Response to Comments for the Final Leachate Collection System Expedited Final Design for the Blackwell Forest Preserve Landfill Site	1
47	08/21/97	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: U.S. EPA/ IEPA's Comments on the the July 25, 1997 Revised Predesign Report for the Blackwell Forest Preserve Landfill Site	2
48	08/28/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter Forwarding Attached Addendum No. 4: Field Sampling Plan for the North Stormwater Pipe Subsurface Soil Investi- gation and Surface Water Sampling of Sand Pond for the Blackwell Forest Preserve Landfill Site	90
49	09/09/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter re: Backfill of Leachate Collection Sys- tem Trenches at the Blackwell Forest Preserve Landfill Site	20

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
50	09/15/97	Labunski, S., Tetra Tech EM, Inc.	Bellot, M., U.S. EPA	Letter re: Tetra Tech's Technical Review of the August 28, 1997 Field Sampling Plan and Quality Assurance Project Plan for the Predesign Activities at the Black- well Forest Preserve Landfill Site	3
51	09/19/97	Dovantzis, K., Tetra Tech EM, Inc.	Bellot, M., U.S. EPA	Letter re: Field over- sight Summary No. 1 for Final Remedial Design Activities at the Black- well Forest Preserve Landfill Site	25
52	09/22/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter re: Use of the Low Flow Sampling Method for Quarterly Groundwater Monitoring Activities at the Blackwell Forest Preserve Landfill Site w/ Attached April 1996 U.S. EPA Publication Ground Water Issue: Low Flow (Minimal Drawdown) Groundwater Sampling Procedures (EPA/540/ S-95/504)	14
53	09/24/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Addendum No. 3 to the Final Leachate Collection System Expedited Design Report for the Blackwell Forest Preserve Landfill Site	24
54	10/08/97	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: U.S. EPA/ IEPA's Comments on the August 28, 1997 Addenda to Sampling Plans for the Proposed Investigation of the North Stormwater Pipe and Surface Water Sampling of Sand Pond for the Blackwell Forest Preserve Landfill Site	3
55	11/20/97	Dovantzis, K., Tetra Tech EM, Inc.	Bellot, M., U.S. EPA	Field Oversight Summary No. 2 for Final Remedial Design Activities at the Blackwell Forest Preserve Landfill Site	87

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
56	12/04/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Revised Addenda to Sampling Plans for the Proposed investigation of North Stormwater Pipe and Surface Water Sampling of Sand Pond at the Blackwell Forest Preserve Landfill Site	96
57	12/05/97	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter re: Water Sample Results from Manhole MH- 20 for the installation of the Leachate Control System at the Blackwell Forest Preserve Landfill Site	59
58	12/22/97	Dovantzis, K., Tetra Tech EM, Inc.	Bellot, H., U.S. EPA	Letter re: Tetra Tech's Technical Review of the Revised Addendum to the Sampling Plan for the North Stormwater Pipe at the Blackwell Forest Preserve Landfill Site	5
59	12/24/97	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve of Dupage County	Letter re: Revised Addenda to Sampling Plans for the Proposed Investigation of the North Discharge Pipe at the Blackwell Forest Preserve Landfill Sit	2
60	12/31/97	Dovantzis, K., Tetra Tech EM, Inc.	Bellot, M., U.S. EPA	Letter re: Field over- sight Summary No.3 for Final Remedial Design Activities at the Black- well Forest Preserve Landfill Site	19
61	01/07/98	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter re: outstanding Construction Items Identified During the Pre-Final Inspection for the Blackwell Forest Preserve Landfill Site	2
62	01/22/98	Tetra Tech EM, Inc.	U.S. EPA	Draft Site-Specific Plans for the Blackwell Forest Preserve Landfill Site	522
63	02/00/98	Montgomery Watson	U.S. EPA	Monitoring Well Assess- ment Report for the Blackwell Forest Preserve Landfill Site	123
64	02/18/98	Vagt, P., Montgomery Watson	Bellot, M., U.S. EPA	Letter re: Natural Attenuation Study at the Blackwell Forest Preserve Landfill Site	7

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
65	02/26/98	Finkelberg, L., U.S. EPA/ Field Services Section	Bellot, M., U.S. EPA	Memorandum re: FSS' Review of the Draft Quality Assurance Project Plan for Natural Attenu- ation Evaluation and Split Sample Collection at the Blackwell Forest Preserve Landfill Site (Incorrectly Dated February 26, 1997)	4
66	03/11/98	Finkelberg, L., U.S. EPA/ Field Services Section	Bellot, M., U.S. EPA	Memorandum re: FSS' Review of Addendum #5 to the Quality Assurance Project Plan for the Blackwell Forest Preserve Landfill Site	5
67	03/23/98	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: U.S. EPA/ IEPA's Approval, with Modification, of the February 18, 1998 Proposed Natural Atten- uation Study for the Blackwell Forest Preserve Landfill Site	2
68	04/00/98	Montgomery Watson	U.S. EPA	Quality Assurance Project Plan: Addendum #5 (Quarterly Groundwater Monitoring) for the Blackwell Forest Preserve Landfill Site	19
69	04/00/98	Montgomery Watson	U.S. EPA	Quality Assurance Pro- ject Plan: Addendum #6 (Selected Revisions) for the Blackwell Forest Preserve Landfill Site	55
70	04/13/98	Montgomery Watson	U.S. EPA	Review and Planning Meeting Notes for 1998 Activities at the Black- well Forest Preserve Landfill Site	16
71	04/21/98	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Quarterly Groundwater Report: First Round (November 1997) for the Blackwell Forest Preserve Landfill Site	44
72	04/21/98	Buettner, W. & 1). Vagt; Montgomery Watson	Bellot, M., U.S. EPA	Letter re: Anomalous Phenol and Phthalate Concentrations in the First Round of Quarterly Groundwater Sampling at the Blackwell Forest Preserve Landfill Site w/ Attachments	362

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
73	04/24/98	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Cover Letter Forwarding Revisions and Addenda for the Quality Assurance Project Plan for the Blackwell Forest Preserve Landfill Site	1
74	05/12/98	Finkelberg, L., U.S. EPA/ Field Services Section	Bellot, M., U.S. EPA	Memorandum re: FSS' Review of Addendums #5 and #7 to the QAPP for the Blackwell Forest Preserve Landfill Site	3
75	05/19/98	Mishra, M., Tetra Tech RM, Inc.	Bellot, M., U. S. EPA	Letter re: Tetra Tech's Technical Review Comments on the April 21, 1998 (1) First Round of Ground- water Monitoring Report and (2) Anomalous Phenol and Phthalate Concentra- tions Report for the Blackwell Forest Preserve Landfill Site	1
76	06/00/98	Montgomery Watson	U.S. EPA	Field Sampling Plan: Addendum #4 (Natural Atten- uation Study) for the Blackwell Forest Preserve Landfill Site	17
77	06/00/98	Montgomery Watson	U.S. EPA	Quality Assurance Pro- ject Plan: Addendum #7 (Natural Attenuation Study) for the Blackwell Forest Preserve Landfill Site	131
78	06/11/98	Tetra Tech EM, Inc.	U.S. EPA	Field oversight Summary No. 1 for Remedial Activities oversight for the DuPage County Landfill Site	10
79	06/15/98	Buettner, W. & P. Vagt; Montgomery Watson	Bellot, M., U.S. EPA	Letter re: Revised Natural Attenuation Study for the Blackwell Forest Preserve Landfill Site	13
80	06/30/98	Mishra, M., Tetra Tech EM, Inc.	Bellot, M., U.S. EPA	Letter re: Tetra Tech's Technical Review Comments on the Revised Draft Operations and Mainten- ance Plan for the DuPage County Landfill Site	2
81	07/00/98	U.S. EPA	Public	Proposed Plan for the DuPage County Landfill Site	17

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
82	07/01/98	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: U.S. EPA/ IEPA's Approval of the Revised Natural Attenu- ation Study for the Blackwell Forest Preserve Landfill Site	1
83	07/07/98	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: U.S. EPA's Approval of the June 1998 Quality Assurance Project Plan Addenda #4, #6 and #7 for the Dupage County Landfill Site	1

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR
DUPAGE COUNTY LANDFILL/BLACKWELL FOREST PRESERVE LANDFILL SITE
DUPAGE COUNTY, ILLINOIS

UPDATE #4
SEPTEMBER 24, 1998

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	06/00/95	Montgomery Watson	U.S. EPA	Draft Feasibility Study Report for the Blackwell Landfill NPL Site	326
2	11/24/97	First Environmental Laboratories, Inc.	Montgomery Watson	Analytical Reports for the DuPage County Land- fill/Blackwell Forest Preserve Landfill Site	182
3	01/22/98	Tetra Tech EM, Inc.	U.S. EPA	Draft Site Specific Plans for the Blackwell Forest Preserve Landfill Site	532
4	02/00/98	Montgomery Watson	U.S. EPA	Quality Assurance Project Plan: Addendum No. 5 (Quarterly Ground- water monitoring) for the Blackwell Landfill Site	275
5	04/00/98	Montgomery Watson	U.S. EPA	Quality Assurance Project Plan: Addendum #6 (Selected Revisions) for the Blackwell Land- fill Site	56
6	04/16/98	Johnson, S., Prairie Analytical Systems, Inc.	Mottashed, W., First Environmental Laboratories, Inc.	Letter re: Modifications to the standard operating Procedure for Method 525.2 w/ Attachments	19
7	05/12/98	Finkelberg, L., U.S. EPA/ Field Services Section Section	Bellot, M., U.S. EPA	Memorandum re: FSS' Review of Addendums (#6 and #7) to the Quality Assurance Project Plan for Additional Activities at the Blackwell Landfill Site	4
8	06/00/98	Montgomery Watson	U.S. EPA	Quality Assurance Project Plan: Addendum No. 4 (Field Sampling Plan--Natural Attenuation Study) for the Blackwell Landfill Site	17

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
9	06/00/98	Montgomery Watson	U.S. EPA	Quality Assurance Project Plan: Revised Addendum No. 7 (Natural Attenuation Study) for the Blackwell Landfill Site	133
10	06/15/98	Buettner, W. & P. Vagt; Montgomery Watson	Bellot, M., U.S. EPA	Letter re: the Proposed Natural Attenuation Study at the Blackwell Forest Preserve Landfill Site	13
11	06/15/98	Buettner, W. & P. Vagt; Montgomery Watson	Bellot, M., U.S. EPA	Letter re: MW's Response to U.S. EPA Comments on the Proposed Natural Attenuation Study at the Blackwell Forest Preserve Landfill Site	3
12	06/16/98	Beard, G., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: Recovery of Costs for oversight Activity Performed at the DuPage County Land- fill Site	2
13	06/24/98	Mishra, M., Tetra Tech EM, Inc.	Bellot, M., U.S. EPA	Letter re: Field Over- sight Summary No. 1 for Remedial Activities at the DuPage County Land- fill Site	1
14	07/00/98	U.S. EPA	Public	Fact Sheet: "U.S. EPA Recommends Cleanup Plan for the DuPage County Landfill Superfund Site"	12
15	07/07/98	Bellot, M., U.S. EPA	Benedict, J., Forest Preserve District of DuPage County	Letter re: U.S. EPA's Approval of the June 1998 Quality Assurance Project Plan Addendums Nos. 4, 6 and 7 for the DuPage County Landfill/ Blackwell Forest Preserve Landfill Site	1
16	07/15/98	Vagt, P. W. Buettner; Montgomery Watson	Bellot, M., U.S. EPA	Monthly Status Report for June 1998 for the Blackwell Landfill Site	17
17	07/15/98	Van Matre, L., Chicago Tribune	Public	Newspaper Article: "Forest Preserve Waste Cleanup Set to End Soon: Blackwell Work May End in Month"	2

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
18	07/27/98	Griesemer, B. & W. Buettner; Montgomery Watson	Addressees	Meeting Notes re: the July 16, 1998 Pre- Construction Kick-Off Meeting for the Blackwell Landfill Site	2
19	07/29/98	Puishes, R., Warrenville Post	Public	Newspaper Article: "EPA Reports on Landfill Cleanup"	3
20	08/10/98	Efficiency Reporting	U.S. EPA	Transcript of July 22, 1998 Public Meeting re: the DuPage County (Black- well) Landfill Site	
21	08/17/98	Vagt, P., Montgomery Watson	Bellot, M., U.S. EPA	Monthly Status Report for July 1998 for the Blackwell Landfill Site	4
22	08/24/98	Griesemer, B. & W. Buettner; Montgomery Watson	Addressees	Meeting Notes re: the August 19, 1998 Second Construction Progress Meeting Concerning Cap Repair Construction at the Blackwell Landfill Site	2
23	08/28/98	Bellot, M., U.S. EPA	Distribution List	Memorandum: Distribution of the Draft ROD for the DuPage County Landfill Site	2
24	09/10/98	Benedict, J., Forest Preserve District of DuPage County	Bellot, M., U.S. EPA	Fax Transmission: Written Records Concerning the Leachate Collection System at the Blackwell Forest Preserve Landfill Site	7
25	09/14/98	Buettner, W., Montgomery Watson	Bellot, M., U.S. EPA	Letter re: Response Action Cost Estimates for the Blackwell Land- fill Site	5
26	09/16/98	Bellot, M., U.S. EPA	File	Memorandum re: Placement of the Draft Feasibility Study for the DuPage County Landfill into the Administrative Record	1