

Contract Report 612A

**Vulnerability of Illinois Nature Preserves
to Potential Ground-Water Contamination**
**Volume II: Selected Site Data from Vulnerability
Assessments and Sensitivity Classifications**

by

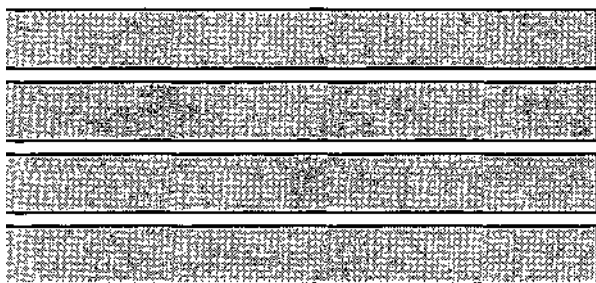
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**Prepared for the
Illinois Nature Preserves Commission**

November 1997



Illinois State Water Survey
Hydrology Division
Champaign, Illinois

A Division of the Illinois Department of Natural Resources

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APPENDIX H:

GIS Analysis of Sensitivities of Nature Preserves
Where Vulnerability Assessments Were Not Made
(grouped by preserve sensitivity)

Maps of Illinois delineating soil associations and geologic materials in the upper 50 feet were used to produce a composite map (Figure 2 in Volume I). The composite map, which is described in detail in Volume I, shows the sensitivity of shallow ground water to contamination and was used to predict the sensitivity of individual preserves and surrounding areas. This was accomplished by overlaying the sensitivity map with maps of the nature preserve boundaries and the boundaries of surrounding areas. GIS analyses of 85 preserves and surrounding areas are presented in Appendix A (Volume I). At these sites, local geology, hydrology and land use were assessed to determine the site vulnerability to surface and ground-water contamination. GIS analyses presented in this appendix are for sites that were on the nature preserve boundary map, but were not visited by a field crew for a vulnerability assessment.

The sensitivity map is an appropriate tool for: 1) statewide or regional prioritization efforts and 2) screening evaluations of individual locations (e.g., nature preserves). One use of this information would be to determine which sites should undergo vulnerability assessments next. In any situations that require highly accurate predictions of preserve sensitivity, additional site-specific soils and geologic information should be collected and used.

INPC No.	Nature Preserve Name	Preserve Sensitivity (percent of total area*)					
		VH	H	M	L	DL	SW

Sensitivity of Surrounding Area (percent of total area*)						
VH	H	M	L	DL	SW	SL

44	Beach Cemetery Prairie	100					
178	Berryville Shale Glade	100					
118	Brookville Lutheran Cemetery Prairie	100					
179	Brown Barrens	100					
201	Carl & Claire Marie Sands - Main St. Prairie	100					
90	Cary (Junior High) Prairie	100					
64	Freeport Prairie	100					
30	Fults Hill Prairie	100					
67	Grant Creek Prairie	100					
94	Hartley Memorial	100					
29	Henry Allan Gleason	100					
101	Julius J. Knobeloch Woods	100					
15	Kanakakee River	100					
95	Laona Heights	100					
176	Long Branch Sand Prairie	100					
41	Mississippi River Sand Hills	100					
52	Ozark Hills	100					

100						
97		3				
100						
100						
86	14					
81		19				
100						
100						
100						
81	19					
100						
72	9	19				
87		13				
87					13	
100						

3

*Percent of total area: VH = Very High, H = High, M = Moderate, L= Limited, DL = Disturbed Land, SW = Surface Water, SL = Slivers

INPC No.	Nature Preserve Name	Preserve Sensitivity (percent of total area*)					
		VH	H	M	L	DL	SW

Sensitivity of Surrounding Area (percent of total area*)						
VH	H	M	L	DL	SW	SL

74	Pere Marquette	100					
45	Revis Hill Prairie	100					
121	Sagawau Canyon	100					
22	Sand Prairie-Scrub Oak	100					
140	Stemler Cave Woods	100					
154	Tomlin Timber	100					
116	Wirth Prairie	100					
143	Meredosia Hill Prairie	98	2				
8	Salt Creek Woods	96		4			
99	Lloyd's Woods	95		5			
174	Harper-Rector Woods	92		8			
87	William & Emma Bohm Memorial	88	12				
180	McClure Shale Glade	87		13			
192	John M. Olin	85					15
69	Carpenter Park	82		18			
109	Wier Hill Prairie	79		21			
200	Sentinel	74		13			12

91		5				3	
100							
54		46					
91		9					
69	31						
100							
100							
61	39						
63	14	23					
52		32	15				
63		37					
37	28	33	1				
56		44					
71						28	2
67		33					
43		57					
31		35				34	

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*Percent of total area: VH = Very High, H = High, M = Moderate, L= Limited, DL = Disturbed Land, SW = Surface Water, SL = Slivers

INPC No.	Nature Preserve Name	Preserve Sensitivity (percent of total area*)					
		VH	H	M	L	DL	SW

86	Douglas A. Wade Prairie	61		39			
18	Starved Rock	53		39	3	3	2
82	Macarthur Woods	52		30	18		
40	Edward L. Ryerson	50		32	18		
124	Pecumsaugan Creek/Blackball Mine	50		50			
125	Black Hawk Forest		100				
169	Forest Park South		100				
160	Green Lee Cemetery Prairie		100				
182	Grubb Hollow Prairie		100				
46	Harlem Hills		100				
112	Munson Township Cemetery Prairie		100				
63	Myer Woods		100				
68	Norris		100				
149	Plum Grove		100				
170	Robinson Park Hill Prairies		100				
144	Witter's Bob Town Hill Prairie		100				
13	Forest Park	2	98				

Sensitivity of Surrounding Area (percent of total area*)						
VH	H	M	L	DL	SW	SL

32	28	33	7			
37		36	12	3	11	
27		42	31			
55		16	28			
45		55				
24	60	14	3			
19	62	20				
	61	39				
1	71	24	4			
28	72					
	100					
	100					
40	41	19				
	100					
1	91	8				
	100					

*Percent of total area: VH = Very High, H = High, M = Moderate, L= Limited, DL = Disturbed Land, SW = Surface Water, SL = Slivers

INPC No.	Nature Preserve Name	Preserve Sensitivity (percent of total area*)					
		VH	H	M	L	DL	SW

Sensitivity of Surrounding Area (percent of total area*)						
VH	H	M	L	DL	SW	SL

17	George S. Park Memorial Woods		95	5			
100	Harper's Woods		88	12			
145	Burton Cave		66	34			
3	Busse Forest	46	54				
97	Severson Dells	46	54				
49	Baber Woods			100			
75	Belmont Prairie			100			
92	Brownlee Cemetery Prairie			100			
159	Byler Cemetery Savanna			100			
157	Bystricky Prairie			100			
191	Carl Flierman's River			100			
104	Cave Creek Glade			100			
62	Colored Sands Bluff			100			
85	CreveCoeur			100			
147	Denby Prairie			100			
142	Fairchild Cemetery Savanna			100			
162	Foley Sand Prairie			100			
136	Funks Grove			100			

	65	35				
	29	45	26			
5	41	55				
46	53	1				
70	20	11				
2		98				
		95				5
		100				
34		45	21			
66		34				
		100				
43		57				
33		67				
1		96	3			
21		79				
2		85	13			
3		97				
		77	23			

*Percent of total area: VH = Very High, H = High, M = Moderate, L= Limited, DL = Disturbed Land, SW = Surface Water, SL = Slivers

INPC No.	Nature Preserve Name	Preserve Sensitivity (percent of total area*)					
		VH	H	M	L	DL	SW
139	Glenbrook No. High School Prairie			100			
175	Gooseberry Island			100			
55	Halesia			100			
141	Hooper Branch Savanna			100			
137	Manito Prairie			100			
60	Margery C. Carlson			100			
39	Marion Co. Prairie Chicken Sanctuary			100			
114	Massasauga Prairie			100			
171	Mehl's Bluff			100			
73	Morton Grove Prairie			100			
187	Parklands			100			
172	Racoon Grove			100			
79	Reed-Turner Woodland			100			
152	Roberts Cemetery Prairie			100			
48	Round Bluff			100			
33	Russell M. Duffin			100			
10	Shoe Factory Road Prairie			100			

Sensitivity of Surrounding Area (percent of total area*)						
VH	H	M	L	DL	SW	SL
		100				
		85	15			
10		82				9
3		97				
		100				
		88	10	2		
		100				
		100				
28		72				
		100				
5		95				
		100				
		100				
		82			18	
		100				
9		91				
		100				

*Percent of total area: VH = Very High, H = High, M = Moderate, L= Limited, DL = Disturbed Land, SW = Surface Water, SL = Slivers

INPC No.	Nature Preserve Name	Preserve Sensitivity (percent of total area*)					
		VH	H	M	L	DL	SW

122	Somme Prairie			100			
89	Spitler Woods			100			
115	Spring Grove Cemetery Prairie			100			
156	Stubblefield Woodlots			100			
28	Thomson-Fulton Sand Prairie			100			
66	Thorn Creek Woods			100			
4	Cap Sauers Holdings	4		96			
148	Jubilee College Forest	4		96			
151	Wards Grove		4	96			
58	Chestnut Hills	4		93	3		
7	Paw Paw Woods	11		89			
2	Black Partridge Woods	25		75			
123	Ridgetop Hill Prairie	30		70			
183	Elton E. Fawks Bald Eagle Refuge	1	32	67			
14	Beall Woods		3	65	32		
134	Tomlinson Pioneer Cemetery Prairie	38		62			
50	Ayers and Prairie	39		61			

Sensitivity of Surrounding Area (percent of total area*)						
VH	H	M	L	DL	SW	SL

		100				
		91	9			
	16	84				
		64	36			
26		48			26	
		85	15			
20		75			5	
16		84				
6	35	58				
5		44	18			34
38		62				
42		58				
42		58				
10	42	26			19	3
	28	31	22			18
33		61	6			
39		48			13	

*Percent of total area: **VH** = Very High, **H** = High, **M** = Moderate, **L** = Limited, **DL** = Disturbed Land, **SW** = Surface Water, **SL** = Slivers

INPC No.	Nature Preserve Name	Preserve Sensitivity (percent of total area*)					
		VH	H	M	L	DL	SW
130	American Beech Woods				100		
153	Bartlett Woods				100		
27	Big Creek Woods Memorial				100		
161	Hetzler Cemetery Prairie				100		
197	Hybernia				100		
193	Liberty Prairie				100		
107	Loda Cemetery Prairie				100		
32	Lusk Creek Canyon				100		
102	Marissa Woods				100		
59	Posen Woods				100		
61	Prospect Cemetery				100		
108	Rock Cave				100		
106	Sunbury Railroad Prairie				100		
111	Temperance Hill Cemetery Prairie				100		
35	Weston Cemetery Prairie				100		
65	Piney Creek Ravine			14	86		
37	Robeson Hills			23	77		

Sensitivity of Surrounding Area (percent of total area*)						
VH	H	M	L	DL	SW	SL
			100			
			100			
		7	93			
			100			
			100			
		7	93			
			100			
		6	94			
		10	88	2		
			100			
			100			
		10	90			
			100			
		42	58			
			100			
		44	56			
2		43	38			17

*Percent of total area: VH = Very High, H = High, M = Moderate, L= Limited, DL = Disturbed Land, SW = Surface Water, SL = Slivers

INPC No.	Nature Preserve Name	Preserve Sensitivity (percent of total area*)					
		VH	H	M	L	DL	SW

Sensitivity of Surrounding Area (percent of total area*)						
VH	H	M	L	DL	SW	SL

38	Jasper Co. Prairie Chicken Sanctuary			40	60		
103	Rocky Branch			47	53		
163	Short Pioneer Cemetery Prairie					100	
71	Middle Fork Woods			25		75	
93	O'Hara Woods						

		29	71			
		37	63			
			23	77		
		36		64		
32	3	13	51			

*Percent of total area: VH = Very High, H = High, M = Moderate, L= Limited, DL = Disturbed Land, SW = Surface Water, SL = Slivers

APPENDIX I:

Output of Vulnerability Assessment Data from the
GROVA Database and Representative Geologic Columns

The Ground-Water Vulnerability Assessment (GROVA) Database is an electronic database which was developed in Visual dBASE version 5.5 to archive field data. It presently contains information from 85 nature preserves where vulnerability assessments were made.

Site surveys began in the southern and central portions of the state near the end of January 1996 and continued until September 1996. Two-member teams with extensive individual field experience in geologic mapping and identification, wetland hydrology and hydrologic interpretation, and water quantity and quality investigation visited the sites. Teams were in the field approximately five weeks and during an average day, three to four sites were evaluated. A field evaluation form was used to organize detailed notes taken on-site. Once field crews returned, information from the field evaluation forms was entered into the GROVA Database.

The database was constructed so that information could be readily added, reproduced, or queried and has been reviewed for accuracy, completeness and technical clarity. The output (i.e., report) for each site was generated by a program written to extract the information from the database and print it in a format similar to the field evaluation form. These reports are arranged alphabetically by site name in this volume. Representative geologic columns are presented after the site reports and were developed separately.

It is intended that the information in this appendix will be used to document general site conditions which will facilitate Class III (Special Resource Ground Water) designations for ground water contributing to these 85 nature preserves. It is also intended for this information to be added or referenced to the existing database(s) of site information maintained by the Illinois Nature Preserves Commission (INPC). Please refer to Volume I for additional discussion of the database, Class III ground water, and field methods used during the vulnerability assessments.

Description of the GROVA Database Reports

Field evaluation forms were completed on-site by each crew and were later reviewed for accuracy and consistency. An example of the field evaluation form is presented in Appendix C of Volume I. Below is a generalized description for each element of the database output and common notations that were used. It should be noted that the field form was altered during the course of the project. Field data from site assessments conducted earlier in the process were arranged in the present database structure as well as possible.

Header Information (includes basic site and visit information):

- Site #: a Survey assigned number from 1 to 85 based roughly on the site's location (from north to south)
- NPC #: an INPC assigned number (a.k.a. Dedication Number) based on the date the site was dedicated to the Illinois Nature Preserves System; Use of this number will be favored in the future, because it is a more permanent way of identifying preserves.

Header Information (continued):

- Site: the official INPC site name
- County: county or counties in which site and buffer areas occur
- Location: township, range, section and quarter section designations for the location of the site and buffer areas
- Acres: approximate acreage covered by the site and dedicated buffer areas
- 7.5 Map(s): name of U.S. Geological Survey 1:24,000 scale topographic maps on which the site can be found
- Visit date: date (mm/dd/yy) of field visit; In a few cases, sites were visited multiple times.
- Field crew: Field crew members are indicated by their initials (DCB - Daniel Barnstable, HAW - Allen Wehrmann, MJM - Mary Mushrush, MVM - Michael Miller, RAL - Randall Locke, RCB - Richard Berg, and SCM - Scott Meyer).
- Photos taken?: a yes or no field indicating if photos were taken
- Number: a numeric field noting the number of photos taken during a single field visit
- Photo description: The use of photos was especially helpful for documenting special features seen during a visit. Locations and subjects were described, and in some cases, the roll and picture number (e.g., R4P10) were noted . The picture location and direction was then marked on a topographic map. Pictures were filed in the original site folders.

Sample Information:

- Source: The source of the field water-quality measurements was noted (e.g., cave, lake, well, pond, seep, stream, wetland, etc.). Additional descriptions were given to identify the sample location more clearly. In many cases, sample locations were marked on topographic maps and were documented with photos.
- Sample data: Date, time, pH (in units), temperature (in degrees Celcius), specific conductivity (in micromhos per square centimeter), and oxidation reduction potential (ORP; in millivolts) were recorded. These measurements give a gross indication of water quality at the site.

Note: Not all sites have sample data from the field visit. In some cases, sufficient water was not available to collect measurements. In other cases (e.g. Volo Bog and Heron Pond-Little Black Slough), field crews were aware of detailed chemical data that would be more accurate in representing the water chemistry at the preserve.

Land Use:

Past and present land uses were described. Present land use descriptions included areas both on and off-site. General descriptions and locations (e.g., southwest of site) were usually given to identify the land use and its proximity to the nature preserve. This section of the evaluation form was changed several times during the project to make the categories more observation based. Assumed or inferred land uses were noted as such.

Past on-site uses: Descriptions of past land uses were restricted to areas within the preserve. Many of the descriptions came from the INPC dedication proposals, but often past uses were unknown. These descriptions were not expected to be comprehensive, but were used to identify major on-site disturbances.

Suburban residential: Uses that were noted include the presence of lawns, domestic wells, above ground disposal (e.g., dumping), and underground disposal (e.g., septic systems). A major purpose of this category was to identify situations where septic systems and lawn chemicals could be a problem because of housing density and proximity to a preserve. Initially, this category was used to identify all residential housing, but in a refinement of the field evaluation form a rural residential category (see below) was added to more accurately reflect observed land uses.

Industrial/commercial/

municipal: Landfills, surface impoundments, mines, stockpiles, cemeteries, pipelines, sewers, above ground disposal (e.g., dumping), and production wells were noted. Most of these are relatively large scale land uses and were identifiable during the field visit.

Agricultural: Agricultural fields, storage tanks, livestock, surface impoundments/feed lots, above ground disposal, drainage wells/tile outlets/ditches, and irrigation wells were noted.

Rural residential: This category was added to the evaluation form to denote situations of low density housing (e.g., farmsteads). In these cases, the presence of domestic wells were used to infer the existence of septic systems.

Transportational: Dirt, gravel, and paved roads, as well as railways were noted. In some cases, a diagram on the original evaluation form shows the location of roads and their relationship to wetland features that may be impacted by runoff. If a diagram was provided, comments entered in the database indicate any specific concerns.

Recreational: Features on-site such as outhouses, trail development, and parking were noted. Off-site features such as golf courses, horse stables, and hunting clubs were also identified. It is important to note that significant water quality and quantity impacts may be associated with on-site recreational developments (e.g., outhouses, supply wells, and paved surfaces) and they should not be overlooked.

On-site miscellaneous: Evidence of dumping or flooding debris was noted.

Geology:

Origin: The primary geologic origin of the site was noted. Identifying whether the site is in a fluvial/alluvial setting (e.g., a river floodplain), lacustrine setting (e.g., an old lake plain), glacial setting (e.g., on a moraine or outwash plain), or eolian setting (e.g., on wind-blown materials such as silt or sand) helps determine the sensitivity of the site to potential contamination. Fluvial/alluvial settings are the most sensitive because of the likelihood of sand and gravel occurring at the surface.

Soils/surficial

sediments: Soils were identified from the local USDA county soil reports. Since soils maintain many of the characteristics of the geologic materials in which they have formed, this provided added geologic data for the site. In addition, a description of the soils provides information for determining water infiltration and discharge within the sites. For example, clayey soils have very slow infiltration and suggest a setting where potential contamination from sources may be minimal.

Quaternary deposits: Materials (glacial and post-glacial materials) were described based on field observations and previous study of well logs and other subsurface information. This provides information on the lateral and vertical extent of aquifer materials (which can readily transport potential contaminants to the site) and confining units (which are fine-grained materials which can restrict or prevent contaminants from being transported to the site). For most sites the particular succession of geologic materials is interpreted (e.g., Cahokia Formation over the Henry Formation over the Haeger Member). Deposits are generally described from the land surface downward and notation is often used which separates the geologic units with a slash (e.g., Cahokia Formation/Henry Formation/Haeger Member).

Bedrock: Bedrock underlying Quaternary materials was also described and its depth beneath the surface was noted. This is particularly important in areas where the glacial deposits are thin (less than 50 feet). The upper lithology, or rock type, was noted as limestone, dolomite, limestone/dolomite, shale, sandstone, or coal. The presence of karst was specifically noted because of the very high rates of contaminant transport possible through these dissolved carbonate rocks.

Representative geologic columns were made for the 85 nature preserves and are presented after the report for each preserve. Columns were constructed to a depth of 100 feet and are stratigraphic interpretations of representative well records that occur at and near the preserves. Information included at the top of each column includes: 1) the site name, 2) a township, range, and section description of the preserve, 3) an estimated elevation for the top of the column in feet, and 4) a description of the source of geologic information. The profiles were used in evaluating the geologic sensitivity of a preserve on a local scale.

Hydrology:

Ground-water inputs: Descriptions include: depth to ground water, local flow directions, and recharge areas based on the topography and the Quaternary/bedrock geology. Estimates of flow directions from a recharge area to the site were commonly recorded and are important in determining potential routes and movement of contamination.

Surface-water inputs: Descriptions include: proximity of surface water bodies to the site, flow directions of rivers and streams, and drainage area. The direction of flows (either overland flow or stream flow) on and off-site were noted. Particularly noteworthy are sites near major rivers which annually flood leaving considerable sediment and flood debris on-site. Common inputs include streams, culverts, tile drains, and overland flow from surrounding uplands.

Ground-water outputs: Most sites are wetland discharge areas and therefore outputs are mainly via evapotranspiration, subsurface movement off-site due to local gradients or discharge to surface water bodies. These are conceptual interpretations and it is likely that under differing seasonal conditions some areas of discharge may become areas of recharge.

Surface-water outputs: These usually consist of small natural streams, spring runs, or constructed drainageways emanating from the preserves. Some sites near major rivers, however, experience major outputs of surface water during floods.

Alterations: Consideration was generally given to any construction that could increase or decrease water flow near a preserve. This includes the installation of weirs, dams, ditches, roadbeds, drainage tiles, etcetera. If they are known, potential impacts to the site are discussed.

Geomorphology/Topography:

The geomorphology and topography descriptions note the position of uplands and lowlands with respect to the site as well as the estimated total relief within the preserve. Prominent landforms are also noted. This information, in combination with geologic and hydrologic information, provides the conceptual model for evaluating the vulnerability of the site to potential contamination from surrounding land uses.

Potential for Contamination of Surface Water and Ground Water:

Use of these categories varied among field crews. They were originally intended to measure the potential for contamination of water off-site. Once the overall potential for contamination of water was assessed, it was assumed the potential for contamination of the preserves could be assessed accounting for any buffering effects because of distance from the preserve, type of contamination, non-sensitive geology, or flow directions.

In general, these categories were used to give summaries of potential sources. For surface water, streams, overland flow, and flooding are discussed in relation to expected on-site impacts from potentially contaminated or sediment-laden surface water. For ground water, potential contaminant sources, hydraulic gradients, and geologic sensitivity of the site were usually discussed.

Initial Assessment of Site Vulnerability:

The critical elements for evaluating vulnerability were 1) the existence of potential sources of contamination, 2) the local flow directions (i.e., whether or not the sources were upgradient), and 3) the sensitivity of the upper geologic materials.

Assessment of vulnerability of sites from surface-water impacts is based on surrounding land uses with particular emphasis on notable changes in land use (e.g., change from agricultural land to residential) over recent years, as well as, road and residential runoff, flooding, sedimentation, stormwater discharge, acid-mine drainage, etcetera. Sites are rated very low to very high depending on degree of potential impact, proximity of surface water bodies to the site, and site conditions (e.g., visible signs of sedimentation). Table 6 from Volume I lists the ratings for the sites and summarizes sources that may potentially impact the sites.

Assessment of vulnerability of sites from potentially contaminated ground water is based on geologic sensitivity both on and off-site, the absence/presence of contaminant sources on and off-site, and whether the sources are upgradient or downgradient. Sites are placed into vulnerability categories from very low (where the geology is not sensitive and contaminant sources are far from the site) to high (where the geology is very sensitive and obvious contaminant sources exist). Figure 7 (Volume I) explains the ratings in detail, while Table 6 (Volume I) lists the ratings and summarizes sources that may potentially impact the sites.

Additional comments or information:

Comments which pertain to both the ground and surface-water condition of the site or additional comments about site vulnerability were noted here.

Site #: 10 NPC #: 195 Site: Almond Marsh
 County: Lake Location: 5 45N HE, 6 45N HE, 31 45N HE
 32 45N HE
 Acres: 110.0 7.5 Map(s): Libertyville, Grayslake
 Visit date: 07/10/96 Field crew: RCB MVM
 Photos taken? Yes Number: 8
 Photo description: pond, creek, sediment in weeds, panorama,
 and Prairie Crossings Ponds

SAMPLE INFORMATION

Source: wetland
 west portion of site (sample #2); All samples
 were noted on the topo.
 stream
 off-site to west near culvert beneath Forest
 Drive on west side (sample #3)
 pond
 approximately 1/16 mile west of site (sample #1)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/10/96	04:43 P	10.9	30.5	520	141
Sample 2	07/10/96	05:07 P	9.2	22.2	1380	229
Sample 3	07/10/96	05:10 P	9.5	18.0	1460	175

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	west of site and upgradient
underground disposal		X	see 'lawns' above

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	surrounding site; approximately 1/4 - 1/2 mile buffer on north, east and south; subdivision roads to west

Is there potential impact from runoff? Yes.
Prairie Crossings Subdivision on the west side of
Route 45 has apparently increased the flashiness of
surface water flow and increased sediment influx.
The subdivision has also apparently changed the
hydroperiod of the wetland.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is primarily from west to east.

surface water

Flow is from west to east via a creek which is ponded
to the west of the site.

OUTPUTS

ground water

discharge into wetlands

surface water

probably flow off the site to the north

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Sawmill Series occurs in lowlands. Wauconda,
Zurich/Morley and Morley soils are adjacent to the
Sawmill Series.

QUATERNARY DEPOSITS

Wadsworth Till overlain by alluvium (Cahokia)

GEOMORPHOLOGY

moraine to west, inter-morainal area with kettles

TOPOGRAPHY

steep to south (about 50 feet of relief) and very flat in wetlands

Potential for Contamination:

of ground water

Septics and lawns may be present, however till materials are not very sensitive. Also, Belvidere Road construction could cause some problems.

of surface water

Prairie Crossings subdivision west of Route 45; some possible impacts from Belvidere Road widening; Septics and lawns may be present at subdivision adjacent to site boundary.

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

Despite septics upgradient and adjacent to the site, it is not particularly sensitive because of the presence of Wadsworth Till.

from surface water is very high.

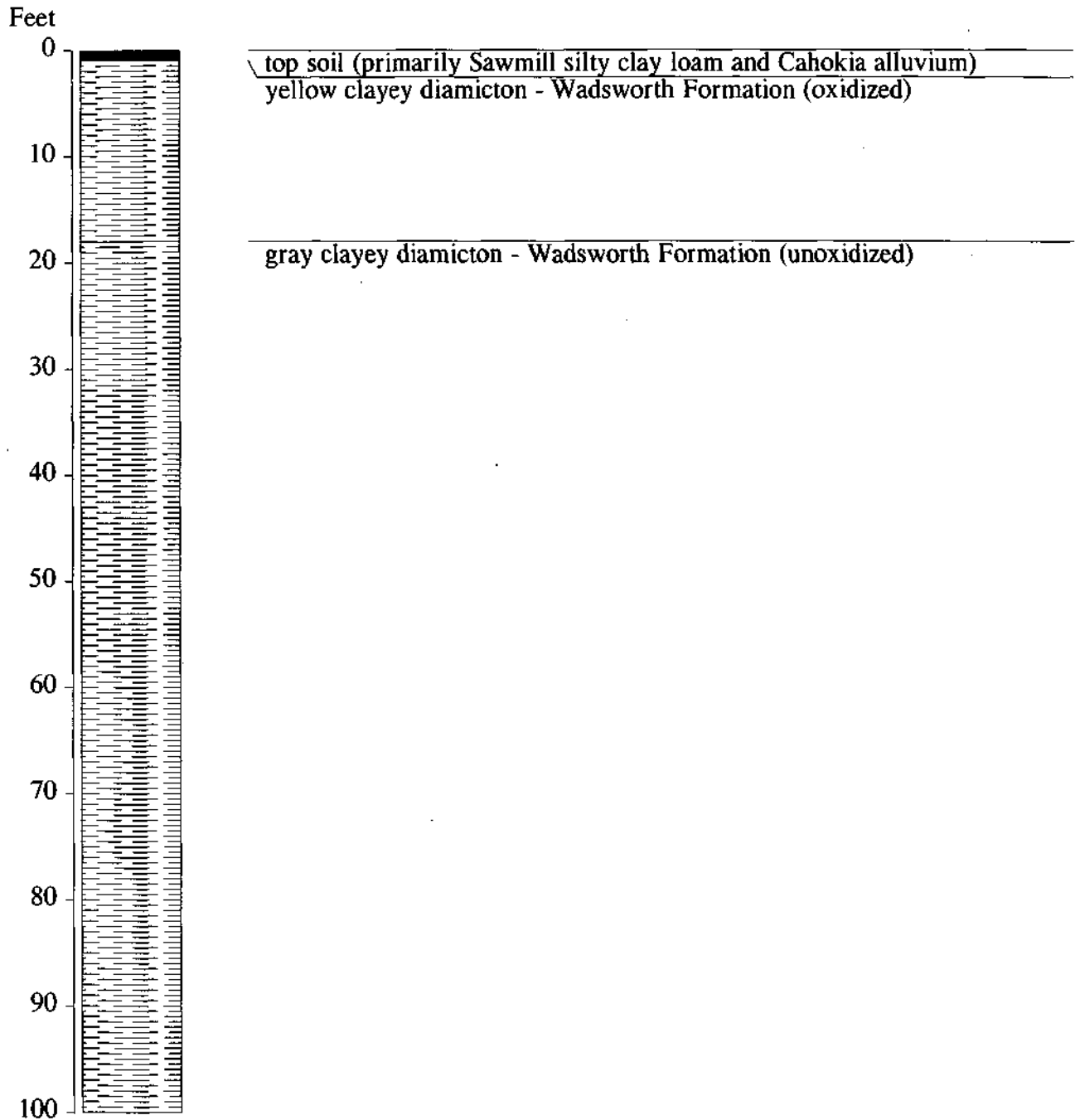
Since Prairie Crossings subdivision was established, creek flow from Prairie Crossings to the site has been very flashy and much new sediment was observed on-site. Hydroperiod influx has changed. There was a very high pH in pond at the site boundary which may suggest high salts. Also, creek 'floodplain' has been severely flooded. Landowner says this never happened prior to Prairie Crossings.

Additional Comments

Holding ponds at Prairie Crossings are dug in Wadsworth Till (i.e., low permeability materials). Therefore, minimal infiltration at the pond is expected. Culverts emanating from ponds into ditches would be responsible for the flashiness of the creek discharging into the site. When the water levels in the ponds rise (due to increased precipitation and runoff), culverts would discharge water fairly quickly to next culvert level and eventually into the creek feeding the wetland.

Almond Marsh Nature Preserve
Lake County - 45N HE Sections 5, 6, 31, 32
740

Stratigraphic Column based on log in Section 31: 150'S 225'E NW/c, NE SW NW



Site #: 76 NPC #: 189 Site: Armin Krueger Speleological
 County: Monroe Location: 29 3S 9W
 Acres: 105.0 7.5 Map(s): Ames, Paderborn
 Visit date: 02/28/96 Field crew: RCM MVM
 Photos taken? Yes Number: 4
 Photo description:

SAMPLE INFORMATION

Source: pond
 from water at the cave entrance (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/28/96		8.9	9.7	690	38

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	surrounding site

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (inferred septic system)		X	farmsteads in area

TRANSPORTATIONAL

	on	off	
	site	site	location & description
gravel road		X	service road

Is there potential impact from runoff? Yes.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Recharge is immediate through karst rocks surrounding site. Flow directions may be to the northeast or southeast as seen in the surface drainage pattern, however actual directions will be dependent on the cavern network.

surface water

Site is in the upper reaches of the Horse Creek watershed. Some flow is expected toward Horse Creek to the north and east. The creek crosses the site in the north.

OUTPUTS

ground water

Some component of flow is expected to Horse Creek to the east, but flow may also be to the west toward the Mississippi River.

surface water

Horse Creek exits the site in the northeast corner.

GEOLOGY:

SOIL ASSOCIATION/SERIES

Wirt, Muren, Hickory, Wakeland, Alford and Blair soils are present.

QUATERNARY DEPOSITS

Peoria Silt over karst limestone

BEDROCK

upper lithology: limestone
supplemental description:

Renault Limestone and St. Louis Formation

depth: 0 - 30 feet

GEOMORPHOLOGY

karst landscape with a well developed surface drainage pattern along Horse Creek

TOPOGRAPHY

rolling karst with up to 120 feet of relief on-site

Potential for Contamination:

of ground water

Potential contaminants include nitrates and pesticides from surrounding agricultural fields. The karst setting makes transport immediate and rapid.

of surface water

see 'ground-water potential for contamination' above

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

There is potential for agricultural chemical contamination of the karst system at the site.

from surface water is moderate to high.

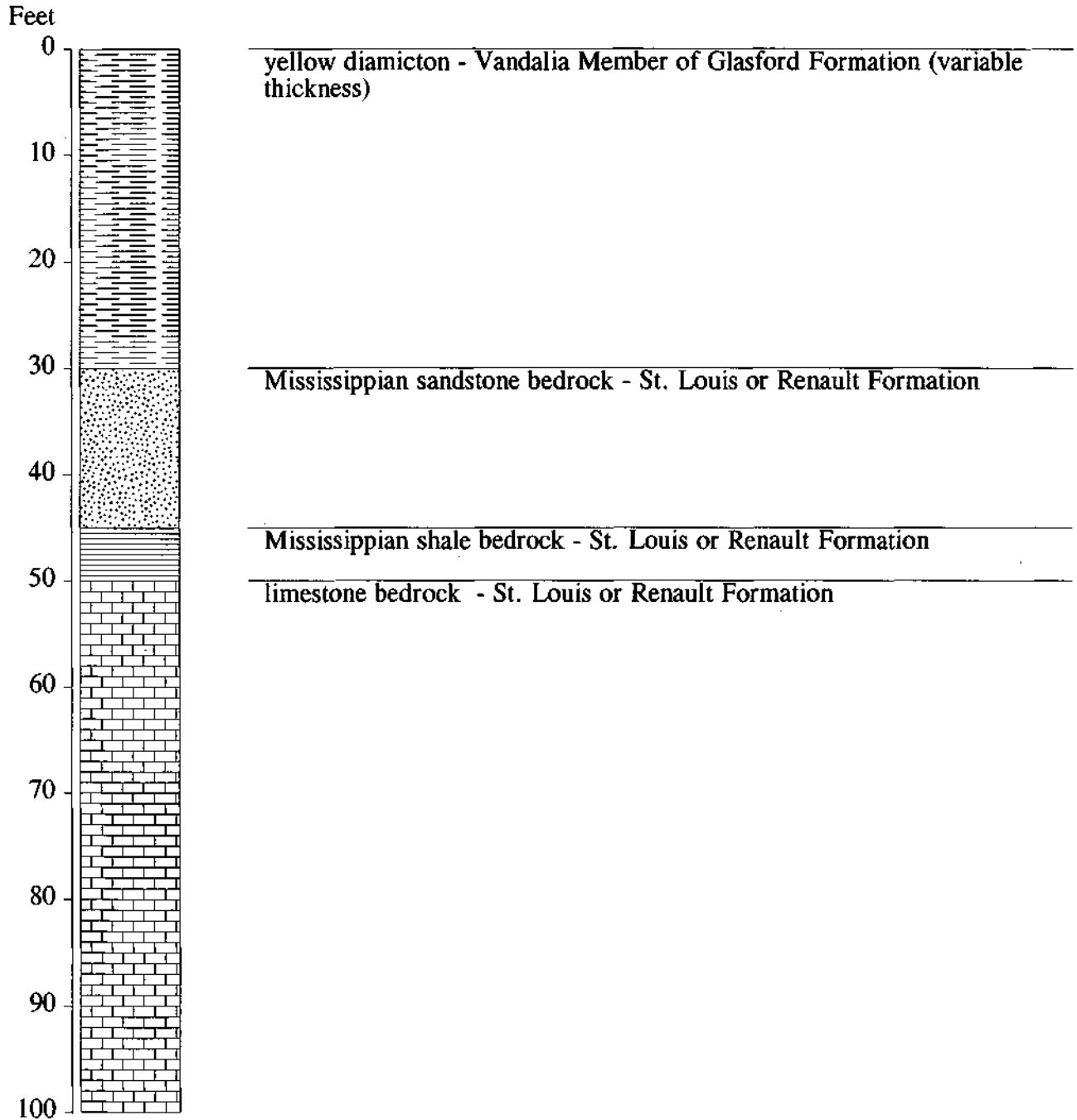
see 'ground-water vulnerability' above

Additional Comments

Sam Panno (ISGS) may have additional chemical or flow data about the preserve.

Armin Krueger Speleological Nature Preserve
Monroe County - 3S 9W Section 29
600

Generalized Stratigraphic Column based on log in Section 20 supplemented by
information from dedication proposal



Site #: 36 NPC #: 119 Site: Baker's Lake
 County: Cook Location: 6 42N 10E; 7 42N 10E; 1 42N 9E
 12 42N 9E
 Acres: 209.9 7.5 Map(s): Lake Zurich
 Visit date: 07/11/96 Field crew: RCB MVM
 Photos taken? Yes Number: 7
 Photo description: P1-P3: east-west panoramic view at the
 north end of Baker's Lake looking south
 near sample site 1, P4-6: west to east
 panoramic view at the south end of
 Baker's Lake looking north (near sample
 site 2), and P7: heron rookery

SAMPLE INFORMATION

Source: lake

Sample 1 is from the north end of Baker's Lake on
 Route 14 (noted on topo).

lake

Sample 2 is from the south end of Baker's Lake
 (noted on topo).

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/11/96	08:45 A	10.6	22.0	600	170
Sample 2	07/11/96	09:20 A	9.4	22.7	410	153

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	west and south of site; sloping toward site

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	extensive residential area west of site and road system south of site associated with Bease Park
railway	X		adjacent to site on northeast corner

Is there potential impact from runoff? Yes.

Paved roads slope toward the lake and wetlands.

RECREATIONAL

	on site	off site	location & description
parking	X		northeast corner
other		X	'parks' - extensive parks and soccer and baseball fields south of site

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is from west to east on the west side and east to west on the east side. It is generally toward the lake and wetlands.

surface water

A creek enters the area from the northeast, however flow is interrupted by the railroad tracks.

OUTPUTS

ground water

Discharge occurs to the lake and wetlands.

surface water

no apparent outputs

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Muskego-Houghton Mucks and Peotone in lowlands; Markham and Morely in higher areas

QUATERNARY DEPOSITS

Grayslake Peat overlying Wadsworth Till

GEOMORPHOLOGY

A kettle lake and wetlands are surrounded by a morainal upland.

TOPOGRAPHY

steeply sloping in surrounding area; In general, the 850 foot contour surrounds the site and local relief is usually less than 10 feet around the lake.

Potential for Contamination:

of ground water

from lawns, park and road runoff

of surface water

from lawns, park and road runoff

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

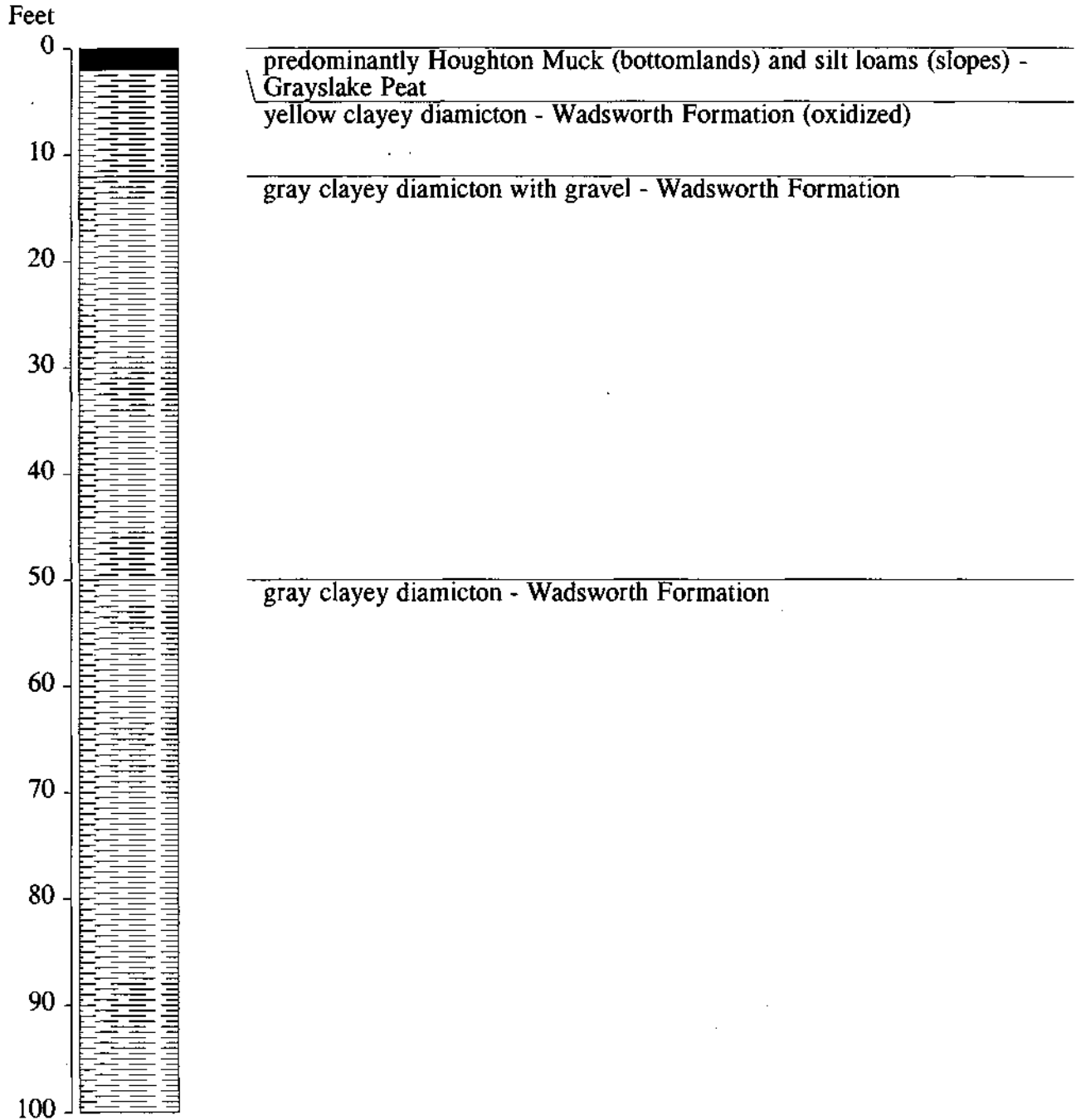
Wadsworth Till has a low sensitivity which protects ground water at the site.

from surface water is moderate.

There is a large public park to the south in addition to residential areas to the west and north of the site.

Baker's Lake Nature Preserve
Cook County - 42N 10E Sec.6, 7; 42N 9E Sec. 1, 12
850

Stratigraphic Column based on log in Section 6: 100'S 200'E NW/c, NE NW SE



Site #: 17 NPC #: 198 Site: Barber Fen
 County: McHenry Location: 11 45N 7E
 Acres: 18.5 7.5 Map(s): Hebron
 Visit date: 05/08/96 Field crew: RAL SCM
 Photos taken? Yes Number: 8
 Photo description: R4 P23: marsh marigold;R4 P24: skunk
 cabbage;R5 P1: eastward view;R5 P2: same
 as R5 P1;R5 P3-5: tussocks;R5 P6-7:
 tussocks & marsh marigolds

SAMPLE INFORMATION

Source: seep

along the north side of Nippersink Creek in west
 central portion of the preserve (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/08/96	05:20 P	7.2	6.2	860	82

PAST ON-SITE LAND USE:

primarily grazing and some farming on floodplain

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	Homes are primarily west of preserve on the north side of Nippersink Creek in Greenwood.
domestic wells underground	X		see 'lawns' above
disposal		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL			
	on site	off site	location & description
pipelines		X	north of Wondermere Road
AGRICULTURAL			
	on site	off site	location & description
row crops		X	corn to north of West Wonder Lake Road; alfalfa and corn to northeast; along Wondermere Road to south and southwest
pasture	X		cattle north and west of nature preserve
livestock surface impoundments/feed lots		X	see 'pasture' above
		X	at farm house at the end of Barber Lane
RURAL RESIDENTIAL			
	on site	off site	location & description
. domestic wells (infers septic system)		X	north of West Wonder Lake Road and along Wondermere Road to the south and southeast of preserve
TRANSPORTATIONAL			
	on site	off site	location & description
paved road		X	

Is there potential impact from runoff? No.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Subsurface flow is from north and south, with flow converging on the Nippersink Creek. Ground water discharges through seeps on the north side of Nippersink Creek. We do not know whether seeps are present on the south side of the creek as we did not visit there. After discharging through the seeps, water enters the Nippersink Creek. Depth to ground water ranges from 0 feet (at seeps) to maybe 30 feet on the hillside at the north edge of the preserve. Recharge is in the uplands to north and south.

surface water

The principal surface-water input is Nippersink Creek, which enters the west end and exits the east end of the nature preserve.

OUTPUTS

ground water

Ground water discharges through obvious seeps along the base of the hillside bordering the Nippersink valley on the north. Discharge may also occur along the stream channel. Undoubtedly much ground water is removed from the saturated zone by evapotranspiration in the Nippersink floodplain, where the water table is at or near the surface.

surface water

Surface water from seeps mentioned above, exits the nature preserve on the east as Nippersink Creek.

ALTERATIONS

No alterations of the local hydrology were observed.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

The Nippersink floodplain is dominated by the Millington Loam, a very poorly drained, horizonless soil composed of variable-textured calcareous sediments and scattered muck deposits. The southeast section of the floodplain contains a small section of another hydric soil, the Houghton Muck. A third hydric soil, the Lena Muck, dominates slopes north of the floodplain. Both Houghton and Lena Mucks occur on slopes permeated by lateral seepage. Very well drained, dry, soils derived from underlying coarse, calcareous gravel make up the predominant upland soils on the south edge of the nature preserve. The only upland soil on the north edge of the nature preserve is the Kidder Loam, which is derived from thin silt and underlying loamy glacial till and gravel. (excerpted from the dedication proposal)

QUATERNARY DEPOSITS

Grayslake Peat/Henry Formation/Yorkville Member

BEDROCK

upper lithology: dolomite
supplemental description:

Probably interbedded shale and dolomite -
Maquoketa?

depth: 160 - 170 feet

GEOMORPHOLOGY

Site is in the Nippersink Creek Valley and is surrounded by uplands composed of the Henry Formation.

TOPOGRAPHY

flat floodplain setting with steep sided creek valley walls north and south of site

Potential for Contamination:
of ground water is moderate.

of surface water is low to moderate.

Initial Assessment of Site Vulnerability:

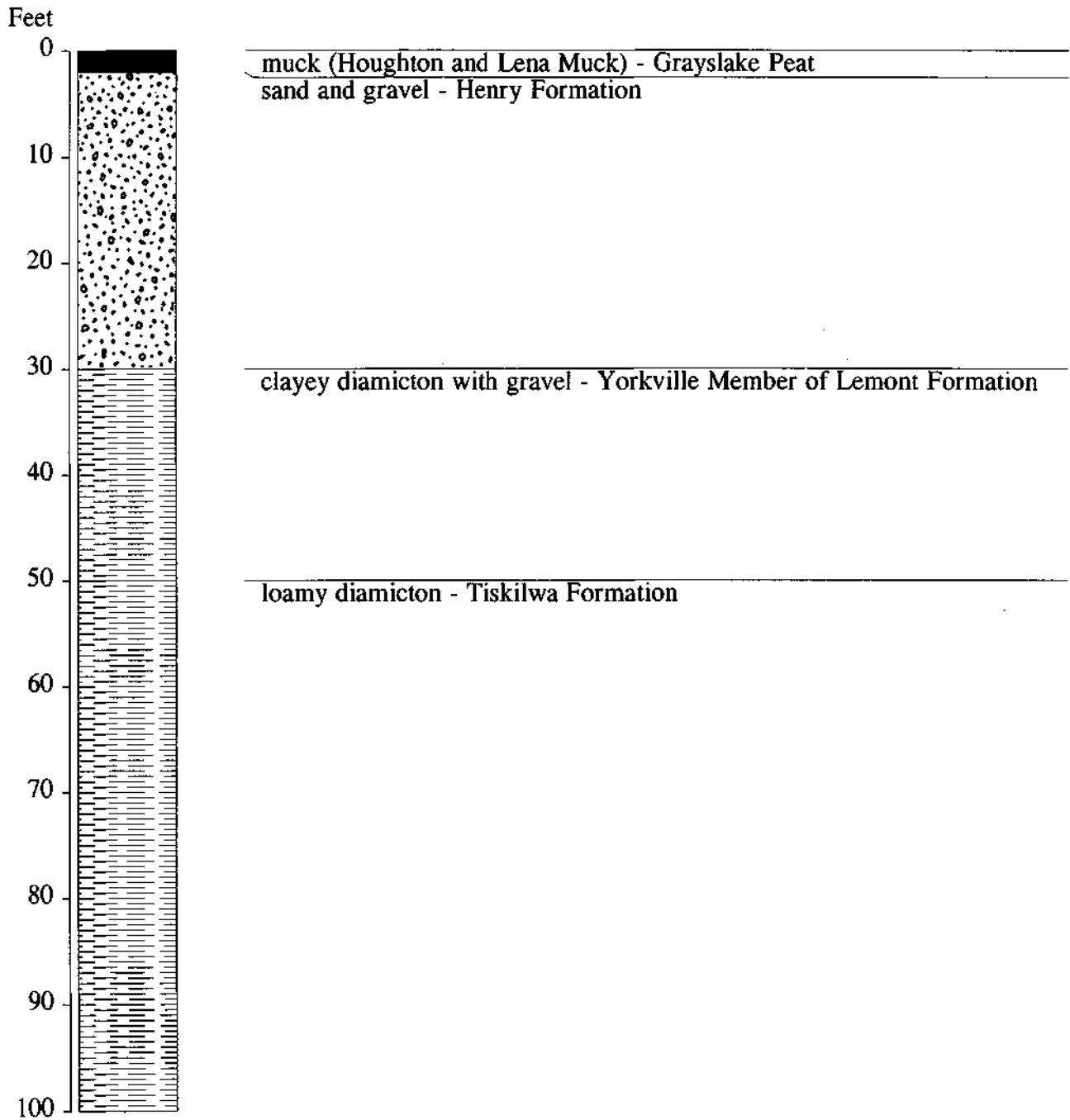
from ground water is moderate.

Relatively thick sand and gravel is at/near surface. The hydraulic gradient conducts water from unprotected areas outside of the nature preserve into the nature preserve.

from surface water is low to moderate.

Natural flooding of the Nippersink could affect plant communities, but it is not perceived as a serious threat.

Barber Fen Nature Preserve
McHenry County - 45N 7E Section 11
840
Stratigraphic Column based on logs in Section 11



Site #: 6 NPC #: 158 Site: Barrington Bog
 County: Lake Location: 11 43N 9E; 12 43N 9E
 Acres: 41.0 7.5 Map(s): Barrington
 Visit date: 06/19/96 Field crew: RAL HAW
 Photos taken? No

NO SAMPLES TAKEN

PAST ON-SITE LAND USE:

Twenty or more years ago, livestock grazed the site. The Citizens for Conservation acquired most of the property in 1986.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns	X	X	Lots are adjacent to the bog on the east and north sides. Lawns slope steeply down to the bog on the east (off of Grandview Drive).
domestic wells		X	see 'lawns' above

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road	x		Route 59 forms the west boundary of the bog. This is a heavily used highway.

Is there potential impact from runoff? Yes.
Runoff from lawns on the east (off of Grandview Drive) is possible. Slopes are very steep. On the west is Route 59. (sketch on file)

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

According to well records, depth to water is quite deep (greater than 50 feet). This could be a function of topography, but is also likely to be due to the depth of the sand and gravel utilized by local wells (often greater than 100 ft.) Many wells are drilled into bedrock even though they pass through tens of feet of sand and gravel. Flow directions of shallow ground water must be into bog, but as there is no surface water outlet; this may be a flow through system. Ground water may then be entering from the east, flowing through or beneath the bog and exiting on the west, generally moving toward the Fox River.

surface water

No point sources of surface water input were seen. Steep slopes on east surely discharge at least diffuse flow off of backyards into the bog. Runoff from adjacent Route 59 on west boundary must also be occurring.

OUTPUTS

ground water

Given there is no surface water outlet, this is somewhat difficult to assess. Regionally, one would expect movement from east to west to the Fox River.

surface water

No recognizable surface water outlets were seen.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Wet Houghton Muck predominates in the bog. Morely soils comprise the uplands.

QUATERNARY DEPOSITS

Wadsworth Member of Wedron Formation. The bog occupies a large kettle hole in the Fox Lake moraine. Moraine ridges rising 20 to 50 feet above the basin surround the bog. No surface streams enter or exit the bog.

BEDROCK

upper lithology: limestone, dolomite
supplemental description:

Depth of bedrock varies from about 200-270 feet and depends greatly on land surface elevation.

depth: 200-270 feet

GEOMORPHOLOGY

According to dedication proposal, the bog is a large kettle hole in the Fox Lake moraine.

TOPOGRAPHY

There is steep relief to the east which rises 20-50 feet above the bog and may have a slope of up to 16%.

Potential for Contamination:

of ground water is moderate.

of surface water is moderate to high.

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

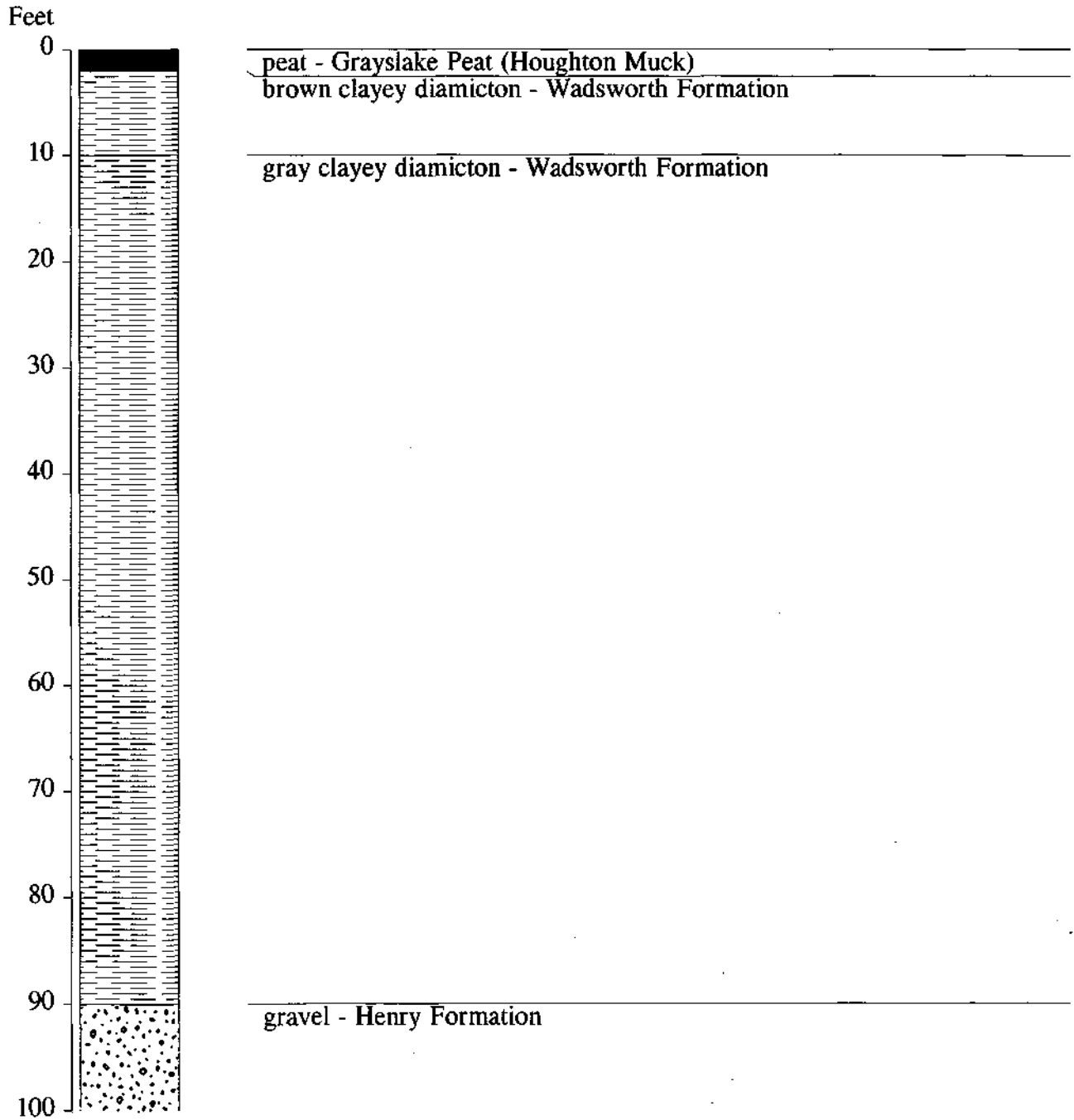
The only obvious sources are septic systems. The geology is not overly sensitive. Sand or sand and gravel is not at surface.

from surface water is moderate.

The most obvious potential is from Route 59. Lawn/yard runoff is also a potential problem.

Barrington Bog Nature Preserve
Lake County - 43N 9E Sections 11, 12
800

Stratigraphic Column based on log in Section 12: 75'SL 250'WL, SE NW SW



Site #: 23 NPC #: 244 Site: Bates Fen
 County: McHenry Location: 30 44N 9E; 31 44N 9E
 Acres: 183.0 7.5 Map(s): Barrington, Wauconda
 Visit date: 06/18/96 Field crew: RAL HAW
 Photos taken? No

NO SAMPLES TAKEN

PAST ON-SITE LAND USE:

hunting and small scale agriculture

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	northwest of nature preserve (> 1 acre sites)
domestic wells		X	near Rawson Bridge (south); northwest of nature preserve (> 1 acre sites)
underground disposal	X		see 'domestic wells' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	north of nature preserve by campground

AGRICULTURAL

	on site	off site	location & description
row crops		X	to northeast near Forbes residence

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (inferred septic system)		X	northeast part of nature preserve (Forbes residence)

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		x	northeast back to Forbes residence
paved road		X	golfcart roads at Chalet Hills

Is there potential impact from runoff? No.

RECREATIONAL

	on site	off site	location & description
other		X	'golf course' - Bates Fen wraps around the northeast corner of Chalet Hills Golf Course. Some of the preserve property used to be golf course property.
other		X	'campground' - to north of preserve (seemed to be primarily a trailer campground)

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Regional flow is from west-southwest towards the Fox River. Local flow is from topographically high areas; primarily from southwest and south where the preserve is adjacent to the golf course, from northeast near campground, and from northwest.

surface water

A creek enters from west and flows along the boundary and through the preserve. Surface runoff comes from topographic highs. Also, a channel enters the preserve from the southwest.

OUTPUTS

ground water

Outputs are seepage to surface water and local discharge to the southeast in eastern part of the preserve (towards the Fox River). A northeast component of flow may exist because of a bend in the Fox River.

surface water

A creek discharges to the Fox River in the southeast part of the preserve.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Houghton and Lena Mucks occur in the fen and are surrounded by Rodman, Fox and Casco soils (all sandy). Some Harpster, Drummer and Branten occur near the Fox River.

QUATERNARY DEPOSITS

Grayslake Peat/Henry Formation/Tiskilwa Member

BEDROCK

upper lithology: limestone

depth: 105 - 183 feet

GEOMORPHOLOGY

Site is along the Fox River. Low lying areas are surrounded by the Haeger Member and sand and gravel uplands.

TOPOGRAPHY

about 15 feet of relief within the nature preserve and up to 100 feet of relief to northwest

Potential for Contamination:

of ground water is moderate.

sensitive geology and local gradients, but little perceived threat

of surface water is moderate to high.

Upstream activities around Silver Lake are a concern.

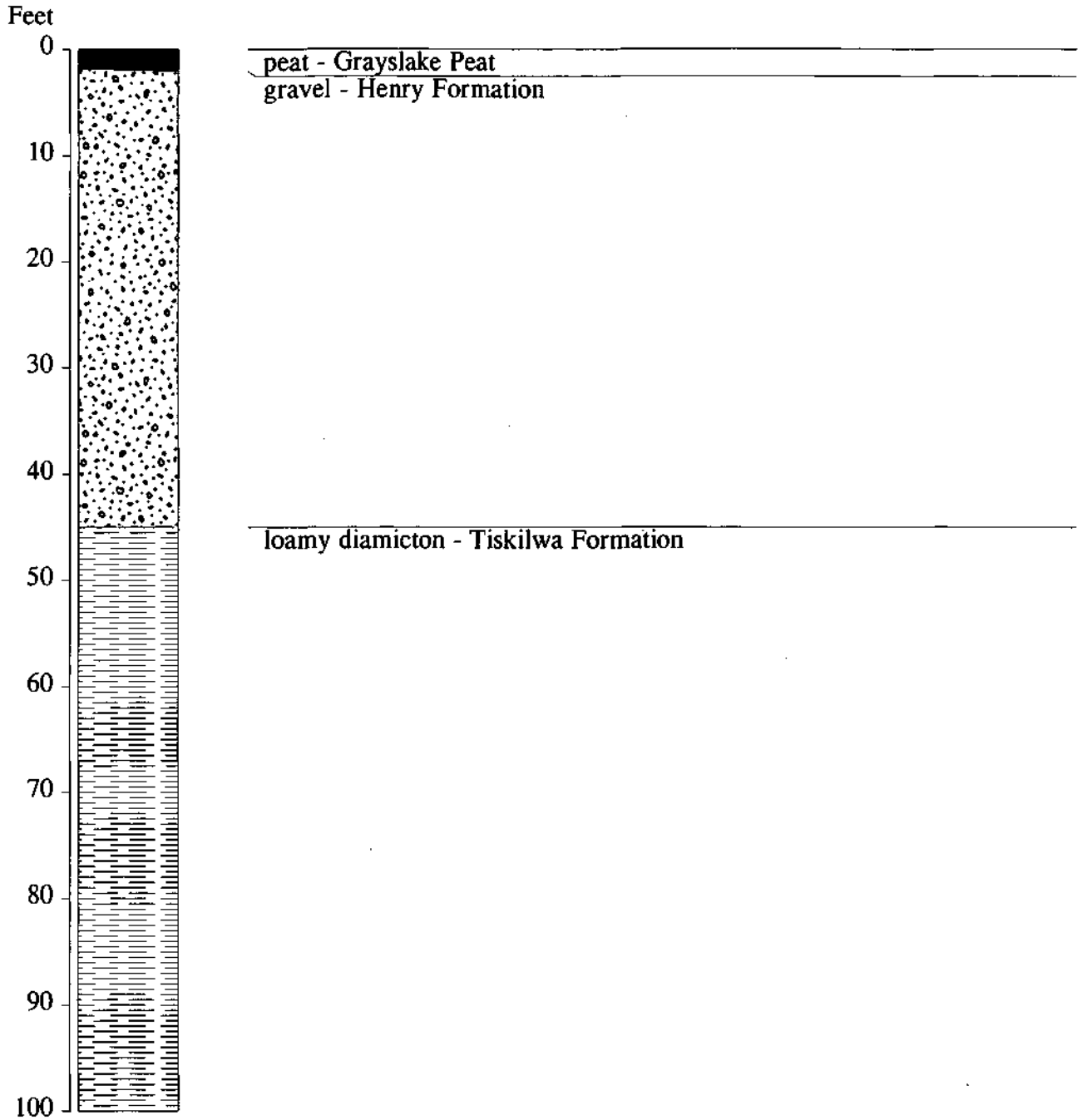
Initial Assessment of Site Vulnerability:

from ground water is moderate.

from surface water is moderate to high.

Bates Fen Nature Preserve
McHenry County - 44N 9E Sections 30, 31, 32
740

Stratigraphic Column based on log in Section 31: SE SW NE



Site #: 65 NPC #: 190 Site: Bennett's Terraqueous Gardens
 County: Tazewell Location: 23 26N 4W, (NW NW SW)
 Acres: 3.5 7.5 Map(s): Peoria East
 Visit date: 03/01/96 Field crew: RCB MVM
 Photos taken? Yes Number: 1
 Photo description:

SAMPLE INFORMATION

Source: stream
 on southwest corner of site (sample 1)
 seep
 on northeast corner of site emanating from bluff
 (sample 2)
 pond
 near center of site near frontage road (sample
 3); This pond is part of a flow-through creek.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	03/01/96		8.3	6.2	900	
Sample 2	03/01/96		8.4	6.2	1040	
Sample 3	03/01/96		8.7	8.3	840	

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	on bluff top about 1/2 mile east northeast of site

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
other		X	'commercial sites' - one south of site and one being developed north of site

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	Illinois 116 and Frontage Road are west of the site.

Is there potential impact from runoff? Yes.
possibly from Frontage Road

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Seeps are fed by sand and gravel which overlies till.
Flow is east to west emanating from slopes.

surface water

A small creek enters the site on the southwest side,
flows along the west border, and exits on the
northwest side. Flow is south to north in the creek.
The creek starts as a storm water outfall near the
edge of the property.

OUTPUTS

ground water

Seeps emanate from bluffs on the east side and
discharge to the creek drainage system.

surface water

The creek exits the site on the northwest side, then
flows north a short distance and diverts under Route
116 and Frontage Road.

ALTERATIONS

1) Building of the boardwalk around the site and 2) Storm water outfall on southern border of site; NOTE: Commercial development on north border of site will affect seep flow into the site. The commercial site is within a seep area as well. On-site seeping could be altered depending on precise flow paths. This should be investigated, however, it appears that ground-water flow is to the west.

GEOLOGY:

SOIL ASSOCIATION/SERIES

On the lower slope, Rozetta Silt Loam, Atterberry, Ipava, and Sable soils are present. On the upper slope, Miami and Hennepin soils are present.

QUATERNARY DEPOSITS

A large exposure occurs just south of site. The site lies on the southwest edge of a Wisconsinan terminal moraine. 10 feet of loess/30 to 40 feet of bedded sand and gravel/Radnor Diamicton.

BEDROCK

supplemental description:

Pennsylvanian Carbondale Formation

GEOMORPHOLOGY

The site is at the bluff toe/high terrace nickpoint on the west side of the Illinois River Valley.

TOPOGRAPHY

On-site relief is nearly 50 feet.

Potential for Contamination:

of ground water

There may be some ground-water problems originating at the bluff top, however impacts are expected to be minimal.

of surface water

Possible sources are surface water from upslope and the small creek flowing through the site (from the storm water outfall).

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

from surface water is moderate.

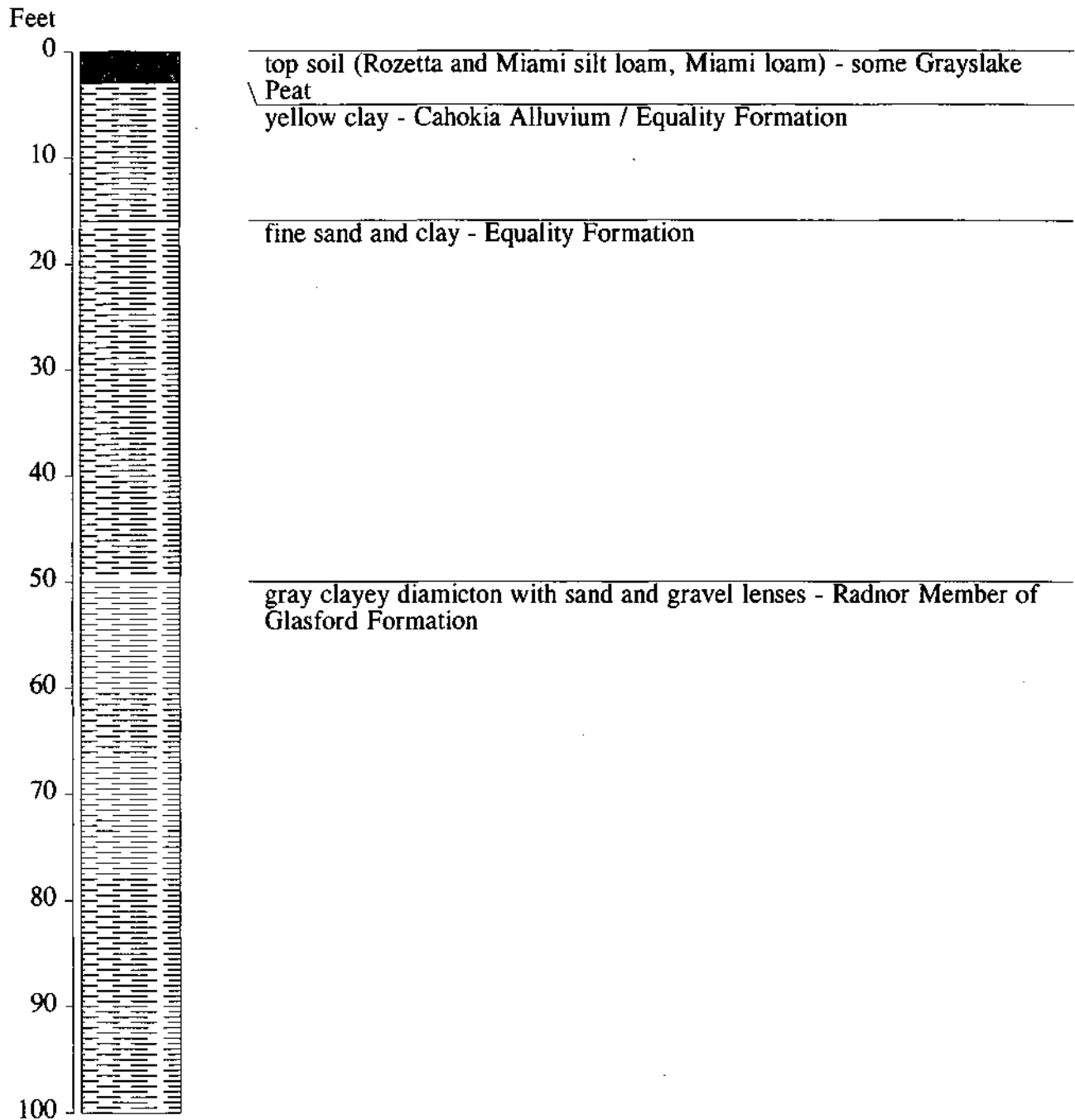
Stormwater runoff from commercial sites may be a problem.

Bennett's Terraqueous Gardens Nature Preserve

Tazewell County - 26N 4W Section 23

500

Stratigraphic Column based on log in Section 22: NE NE SE



Site #: 37 NPC #: 146 Site: Bluff Springs Fen
 County: Cook Location: 19 41N 9E; 30 41N 9E
 Acres: 91.0 7.5 Map(s): Elgin
 Visit date: 06/21/96 Field crew: RAL HAW
 Photos taken? No

NO SAMPLES TAKEN

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	large cemetery on northeast side of site

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
landfill		X	Proposed balefill site is about 1/2 mile south of site.
mining		X	A large gravel pit borders the site to south and east.

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	city roads (to west) and cemetery roads (to north and east)

railway X borders site to
south

Is there potential impact from runoff? Yes.
from cemetery roads and from railroad tracks

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is from the south, east and north from the gravel
pits and cemetery.

surface water

via Poplar Creek

OUTPUTS

ground water

Discharge is into Poplar Creek and seeps.

surface water

Discharge from Poplar Creek goes to the Fox River.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Muskego and Houghton Mucks in lowest portions; Sawmill,
Lorenzo, Kane, Will, and Rodman soils in higher portions

QUATERNARY DEPOSITS

Grayslake Peat/Henry Formation/Yorkville
Diamicton/bedrock

BEDROCK

upper lithology: limestone, dolomite

depth: 50 - 75 feet

GEOMORPHOLOGY

An outwash plain for the West Chicago Moraine is to the east. Kames are to the north and the Poplar Creek floodplain is at the west side of the site.

TOPOGRAPHY

generally flat with steep slopes up the sides of the kames to the north; Total relief on-site is about 60 feet.

Potential for Contamination:

of ground water

from gravel pits, cemetery, railroad, and residential areas

of surface water

Poplar Creek runs through a highly residential area. It drains land upstream with many potential contamination sources.

Initial Assessment of Site Vulnerability:

from ground water is high.

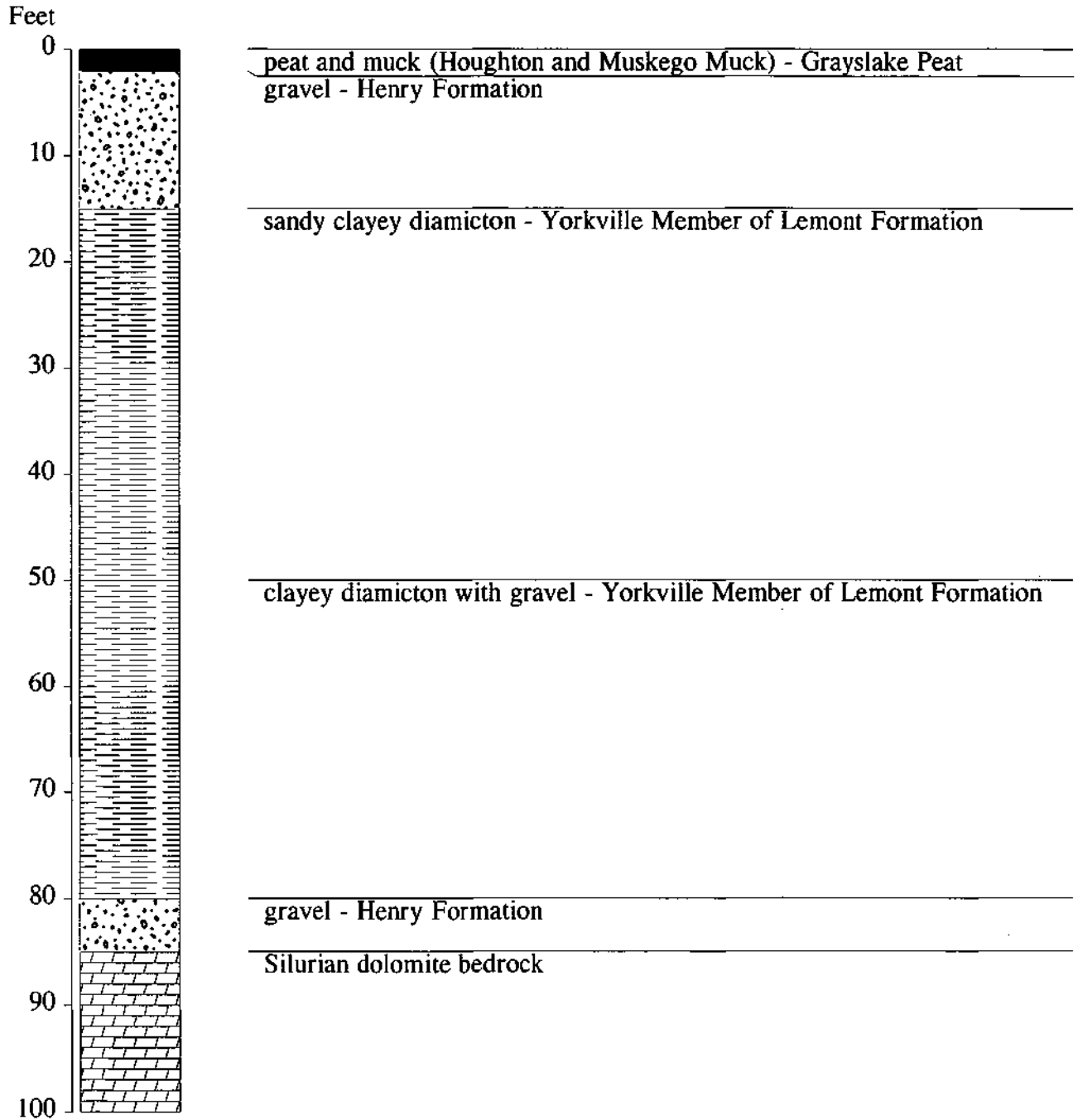
Surficial materials are sand and gravel (i.e., sensitive) and potential contamination sources exist on three sides. The site is downgradient from all three.

from surface water is moderate to high.

Possible culverting of surface flow south of the site along railroad tracks could be a problem.

Bluff Springs Fen Nature Preserve
Cook County - 41N 9E Sections 19,30
760

Stratigraphic Column based on local logs supplemented by INAI information



Site #: 63 NPC #: 218 Site: Bonnie's Prairie
 County: Iroquois Location: 17 27N 12W, (NE NW NE)
 Acres: 10.6 7.5 Map(s): Watseka
 Visit date: 07/08/96 Field crew: RCB MVM
 Photos taken? Yes Number: 3
 Photo description: Photos taken on 7/30/96: marsh area and
 dry sandy area with xeric conditions

SAMPLE INFORMATION

Source: pond

Sample 1 is from the east side along the railroad
 tracks (noted on topo).

pond

Sample 2 is from the north side about 100 feet
 south of county road 2200 North (noted on topo).

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/08/96	02:37 P		25.3	90	142
Sample 2	07/08/96	02:55 P		30.4	60	137

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	sand pit along southeast site border; some excavation debris

AGRICULTURAL

	on site	off site	location & description
row crops		X	Corn and beans surround the site. However, the site is buffered by a forest immediately west and north of site.

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (infers septic system)		X	These are located some distance from the site and pose no problem.

TRANSPORTATIONAL

	on site	off site	location & description
paved road	X		north of site - county road 2200 North
railway	X		on eastern edge of site; New tracks (double tracks) and ties were seen.

Is there potential impact from runoff? Yes.
from county road 2200 North (north of site) and
railroad tracks (to the west)

RECREATIONAL

	on site	off site	location & description
parking	X		in northeast corner

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow direction is to the east. A large dune is
adjacent to the western site border. Ground-water
flow occurs along the contact of sand/gravel with
diamicton. Wetlands are all low areas with thin sand.

surface water

No streams were noted, but sediments deposited by
overland flow were observed.

OUTPUTS

ground water

Primary outputs are local gradients transmitting ground water off-site.

surface water

none apparent

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial

SOIL ASSOCIATION/SERIES

Chelsea (dune sand)

QUATERNARY DEPOSITS

Parkland Sand and Grayslake Peat are at the surface. Yorkville Diamicton is 20-30 feet beneath the sand.

GEOMORPHOLOGY

Large dunes (about 25 feet high) occur west of wetland. A low interdunal area with wetlands occurs east of the site and across the railroad track.

TOPOGRAPHY

Dunes occur to the west and a flat interdunal area is to the east. This is a flat depressional lowland. total relief is about 20-30 feet locally.

Potential for Contamination:

of ground water

Agricultural chemicals may migrate toward the site from the surrounding area.

of surface water

Runoff from railroad tracks (new crosotie ties) and from road (2200 N) are concerns.

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

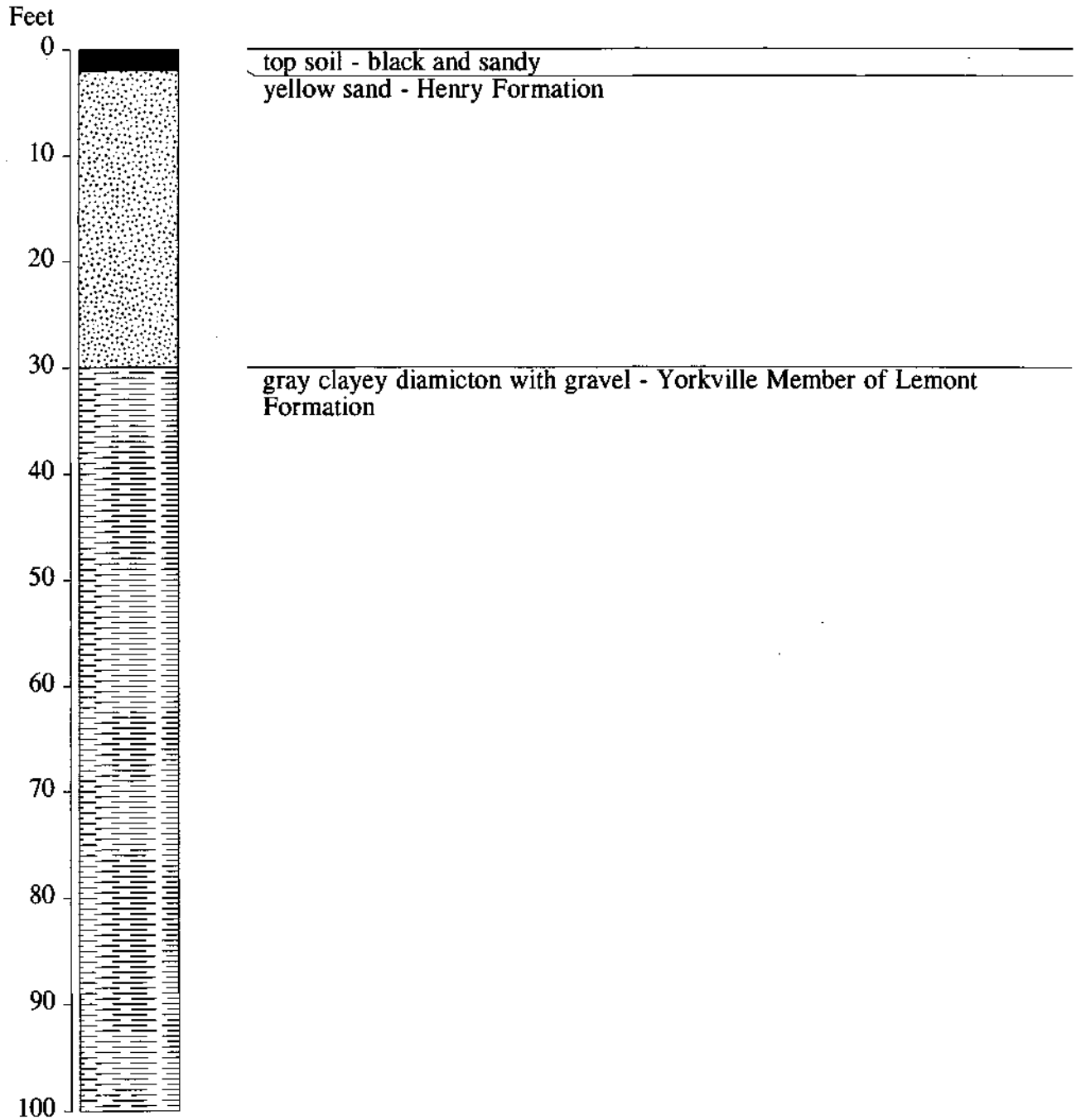
from surface water is low to moderate.

Additional Comments

The water level in the pond is down because of lack of rain. The pond is approximately half it's usual size.

Bonnie's Prairie Nature Preserve
Iroquois County - 27N 12W Section 17
625

Stratigraphic Column based on log in Section 17: SW NW NW



Site #: 49 NPC #: 81 Site: Braidwood Dunes and Savanna
 County: Will Location: 16 32N 9E
 Acres: 259.0 7.5 Map(s): Wilmington, Essex
 Visit date: 04/19/96 Field crew: RAL DCB
 Photos taken? Yes Number: 3
 Photo description: southern view at trail head with reed
 canary grass; dune with tree; new house
 to the southwest of site with piles of
 topsoil ready to be spread

SAMPLE INFORMATION

Source: stream

Sample 1 was from along the trailway in the
 southern part of preserve (noted on topo). Water
 was flowing.

other

'depression with standing water'-location noted
 on topo. Water was not noticeably flowing.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/19/96		6.9	17.2	230	17
Sample 2	04/19/96		7.0	17.0	170	-32

PAST ON-SITE LAND USE:

previously farmed and grazed

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	to northwest (Braidwood); new development to southwest (hauling in topsoil) older development to west and sparse houses to east
domestic wells		X	see 'lawns' above
underground disposal		X	probably at homes noted in 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL			
	on site	off site	location & description
mining		X	in northeast corner of Section 16; extensively to north, south and southwest; primarily coal (?) with a few sandpits
graveyard/carcasses		X	oaklawn & Bohemian Cemetary to east
pipelines		X	in east-west Com Ed. easement between the north and south parts of the preserve
stockpiles other		X	'mining debris' - at strip mines
AGRICULTURAL			
	on site	off site	location & description
livestock		X	northwest of nature preserve (just north of middle/high school); About 40 reindeer, 20 bison, and possibly cattle (?) are in penned areas.
drainage wells/tile outlets/ditches	X	X	ditching in northeast (on-site) and to strip mine area (off-site)
RURAL RESIDENTIAL			
	on site	off site	location & description
domestic wells (infers septic system)		X	to east on Essex Road

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	Route 113 (to north), Essex (to east), Smiley (south), Cemetery-Road (west)
railway	X		to northwest - Illinois Central Gulf

Is there potential impact from runoff? Yes.
 most likely from Cemetery and Smiley Roads (sketch on file)

RECREATIONAL

	on site	off site	location & description
parking	X		
outhouses	X		1 porto-let
trail development	X		

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Ground-water flow is expected to be from southwest to northeast based on topography. Depth to ground water is probably very shallow (0-3 feet) in lower lying areas. Previous and existing strip mining undoubtedly influences ground-water flow.

surface water

There are no distinct surface-water inputs or well developed natural channels. Ditching has been done both on and off-site.

OUTPUTS

ground water

Discharge is expected in low areas and ditches primarily by seepage. Discharge off-site may occur due to local gradients.

surface water

Ditches in the northeast drain to the northeast.
Ditches in the south drain to the east.

ALTERATIONS

Ditching has lowered the ground-water table. If present on-site, tiling would do the same.

GEOLOGY:

Primary geologic origin(s): glacial, eolian

SOIL ASSOCIATION/SERIES

Ade, Bloomfield, Maumee, and Plainfield (all sandy series)

QUATERNARY DEPOSITS

Henry Formation/Yorkville Member/Pennsylvanian Shale

BEDROCK

upper lithology: sandstone, shale

depth: 15 - 40 feet

GЕOMORPHOLOGY

dunes and interdunal areas (blowouts); Low relief dunes are present on which savannahs have formed.

TOPOGRAPHY

about 15 feet of local relief near dunes

Potential for Contamination:

of ground water is high.

Strip mining activities are to the southwest and northeast. Preserve is in an area of high geologic sensitivity.

of surface water

No distinct surface water bodies were seen other than ditches exiting the preserve

Initial Assessment of Site Vulnerability:

from ground water is high.

Abandoned strip mines to southwest are probably contributing to the regional ground-water flow to the northeast.

from surface water is low.

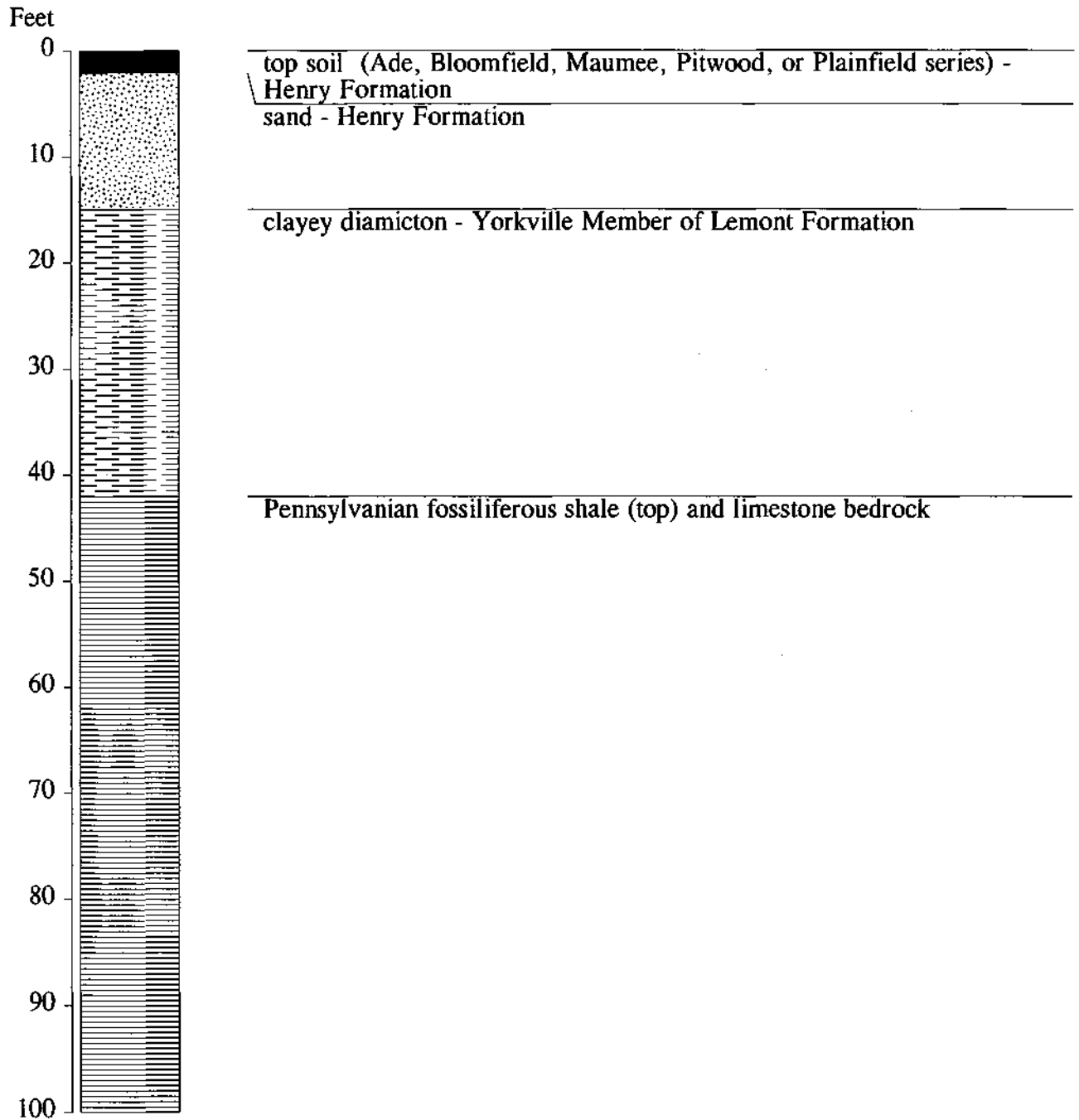
There are no distinct inputs.

Additional Comments

While the mining activities are probably the greatest concern, it is uncertain to what degree they affect the regional ground-water flow and quality. The expected regional ground-water flow is northeast towards the Kankakee River based on topography, however this is highly speculative. If ground-water flow is northeast then the development to the southwest may have more potential for impact.

Braidwood Dunes and Savanna Nature Preserve
Will County - 32N 9E Section 16
595

Stratigraphic Column based on log in Section 15: NW NW NW



Site #: 72 NPC #: 208 Site: Calamus Lake
 County: Macon Location: 21 16N 1W, (NW); 22 16N 1W
 Acres: 120.0 7.5 Map(s): Niantic
 Visit date: 02/29/96 Field crew: RCB MVM
 Photos taken? Yes Number: 3
 Photo description: taken at sample location

SAMPLE INFORMATION

Source: lake
 on west end of site (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/29/96		7.2	5.0	450	

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
surface impoundments/feed lots		X	at hog farm to the northeast
livestock			'hog farm' - to the northeast
drainage wells/tile outlets/ditches		X	'tile inlets' - three inlets on the north boundary of the site; The inlets were noted by the District Heritage Biologist and weren't observed in the field.

row crops		X	surrounding the preserve
RURAL RESIDENTIAL	on site	off site	location & description
domestic wells (inferred septic system)		X	farmsteads north of site
TRANSPORTATIONAL	on site	off site	location & description
paved road		X	county road 1210 North and Route 72/36 to the north
gravel road		X	to the west

Is there potential impact from runoff? Yes.
from paved roads

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

location
dumping along the gravel road on northwest border of site (seems old due to age of cans, etc.)

HYDROLOGY:

INPUTS

ground water

Flow is from north to south from the uplands to the Sangamon River. Calamus Lake is a discharge area between the uplands and the river.

surface water

Flooding from the Sangamon River is possible. Dikes are present on the northwest part of the site. Ditch water enters the site from the uplands. No overland flow enters from the north due to the dike.

OUTPUTS

ground water

Migration off-site occurs from Calamus Lake towards the Sangamon River.

surface water

A channel connects Calamus Lake to the Sangamon River.

ALTERATIONS

ditching and diking

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial

SOIL ASSOCIATION/SERIES

Sawmill and Wabash series (alluvium soils)

QUATERNARY DEPOSITS

Cahokia Alluvium/Henry Formation/Radnor Diamicton

BEDROCK

upper lithology: limestone, shale

supplemental description:

Pennsylvanian Modesto & Carbondale Formation

depth: 170 feet

GEOMORPHOLOGY

The site is on the Sangamon River floodplain and may include a terrace at about an elevation of 575 feet.

TOPOGRAPHY

flat floodplain; less than 10 feet of relief on-site

Potential for Contamination:

of ground water

Potential sources include: agricultural lands upgradient, a hog farm (northeast of site) and dumping debris along the dike.

of surface water

see 'ground-water contamination potential' above

Initial Assessment of Site Vulnerability:

from ground water is moderate.

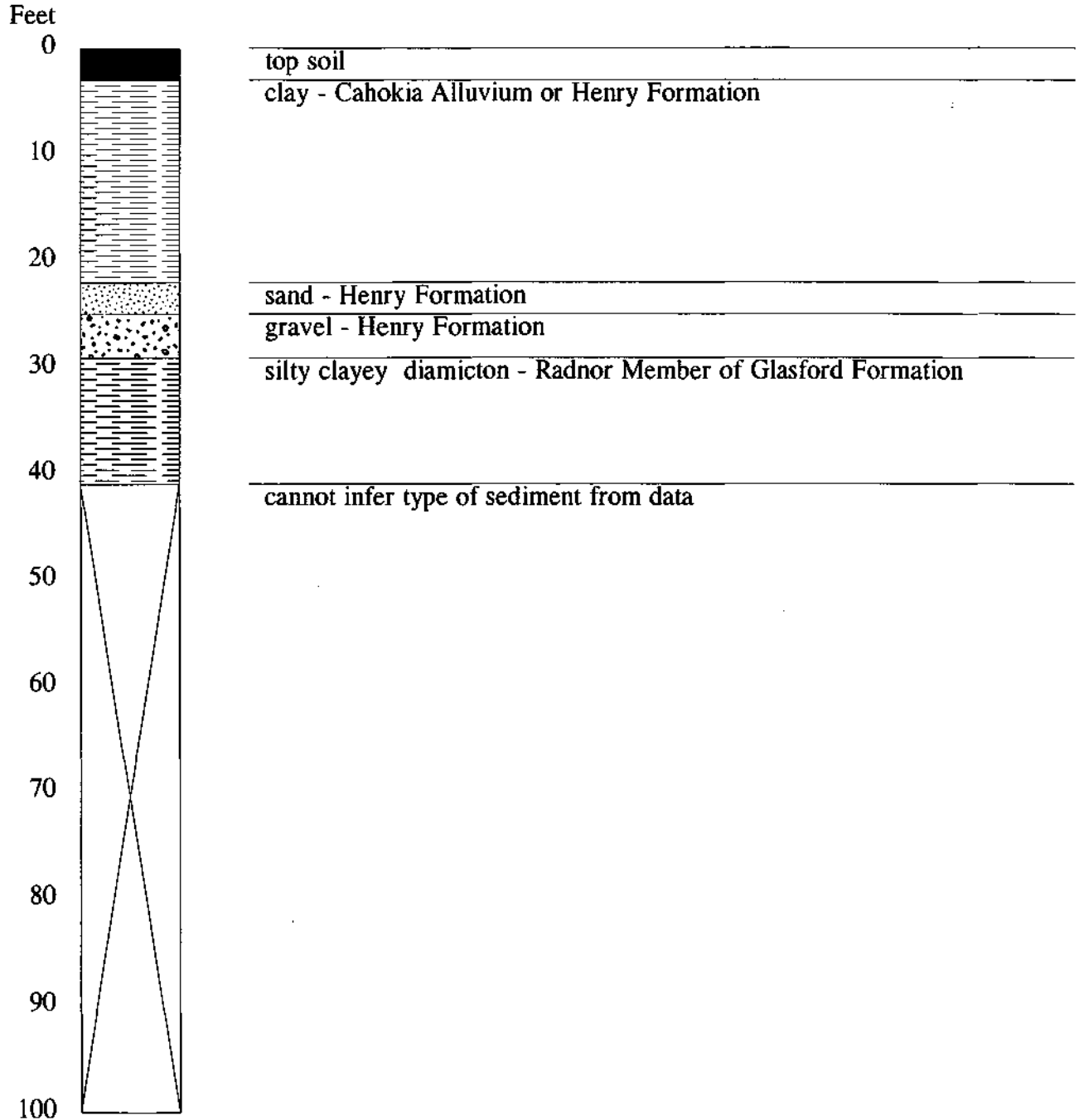
Site is in the flow path of ground water emanating from the uplands.

from surface water is moderate.

Tile outlets were noted and Sangamon River flooding is highly probable.

Calamus Lake Nature Preserve
 Macon County - 16N 1W Sections 21, 22
 570

Generalized Stratigraphic Column based on two of the three available local logs



Site #: 13 NPC #: 57 Site: Cedar Lake Bog
 County: Lake Location: 32 46N 10E
 Acres: 30.2 7.5 Map(s): Antioch
 Visit date: 05/09/96 Field crew: RAL SCM
 Photos taken? No

SAMPLE INFORMATION

Source: wetland

in cattail marsh near southeast corner of nature
 preserve (shallow water); noted on topo

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/09/96	03:07 P	7.4	12.9	560	38

PAST ON-SITE LAND USE:

farming up to Cedar Lake at Allendale facility; few uses
 otherwise

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	northwest of preserve
domestic wells		X	northwest of preserve
above ground disposal/dumping	X		along west and south borders near Allendale; includes 2 large fuel tanks (about 250 gallons), refrigerators, dryers, paint cans, etc.
underground disposal		X	northwest of

preserve

other		X	'Allendale Youth Residential Facility' - south, southeast and east of preserve; old sewage treatment facility near southeast corner of preserve, Allendale is on Lake Villa water and sewer. Storm drain exits near southeast corner of preserve. Trash storage and prep area south of preserve.
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INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
sewers		X	sewer cap seen northwest of Allendale football field
other		X	'automotive garage' - southwest of preserve on corner of Grand Avenue & Fairfield

AGRICULTURAL

	on site	off site	location & description
row crops		X	southwest of preserve

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	sketch on file

Is there potential impact from runoff? No.

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

location
dumping see 'suburban residential - above ground disposal/dumping'

HYDROLOGY:

INPUTS

ground water

Shallow ground water probably enters the preserve from the west, southwest and south and discharges within the preserve. Over most of the site (except the slope of the south margin of the parcel) ground water is at the surface. Along the slope at the south margin, the depth to ground water may approach 10 feet. The principal recharge area for the shallow ground water is the upland mainly to the west.

surface water

Of the inputs to the preserve, surface water is probably less important than is ground water. (The quad map suggests, however, that ground water discharges immediately west and north of the nature preserve. Therefore this water is technically a surface water input to the nature preserve). Minor amounts of surface water probably enters the preserve as runoff from the Allendale School access road (southeast of the preserve) and from overland runoff on the slopes west and south of the preserve. Surface water from Cedar Lake may affect the bog area bordering the lake. The surface water may affect a larger area of the bog during times of high water levels in the lake.

OUTPUTS

ground water

There is probably negligible shallow ground-water output from the preserve. The shallow ground water all discharges within the nature preserve by seepage and evapo-transpiration.

surface water

Surface water, mainly comprised of ground water which discharged on the preserve, exits the north east corner of the preserve into Cedar Lake.

ALTERATIONS

Runoff from paved areas at Allendale School could introduce large volumes of surface water to the preserve, with flow localized particularly at culvert openings and pavements margins. A culvert exit was observed very near the southeast corner of the preserve; the culvert delivered water to an excavated closed depression about 10 to 20 feet in diameter. The depression was lined with rocks and appears to provide slow infiltration of runoff delivered to it during rainfall events.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Zurich and Morley silt loams on slopes surrounding marsh. Within the marsh, the Houghton Muck predominates. There may be some Fox Loam on northwestern slopes.

QUATERNARY DEPOSITS

Grayslake Peat/Wadsworth Diamicton

BEDROCK

depth: 100+ feet

GEOMORPHOLOGY

kettle lake

TOPOGRAPHY

Total relief on-site is less than twenty feet.

Potential for Contamination:

of ground water is moderate.

Geology is not sensitive, but there are obvious threats.

of surface water is high.

Surface water passing over dumping may introduce contamination.

Initial Assessment of Site Vulnerability:

from ground water is moderate.

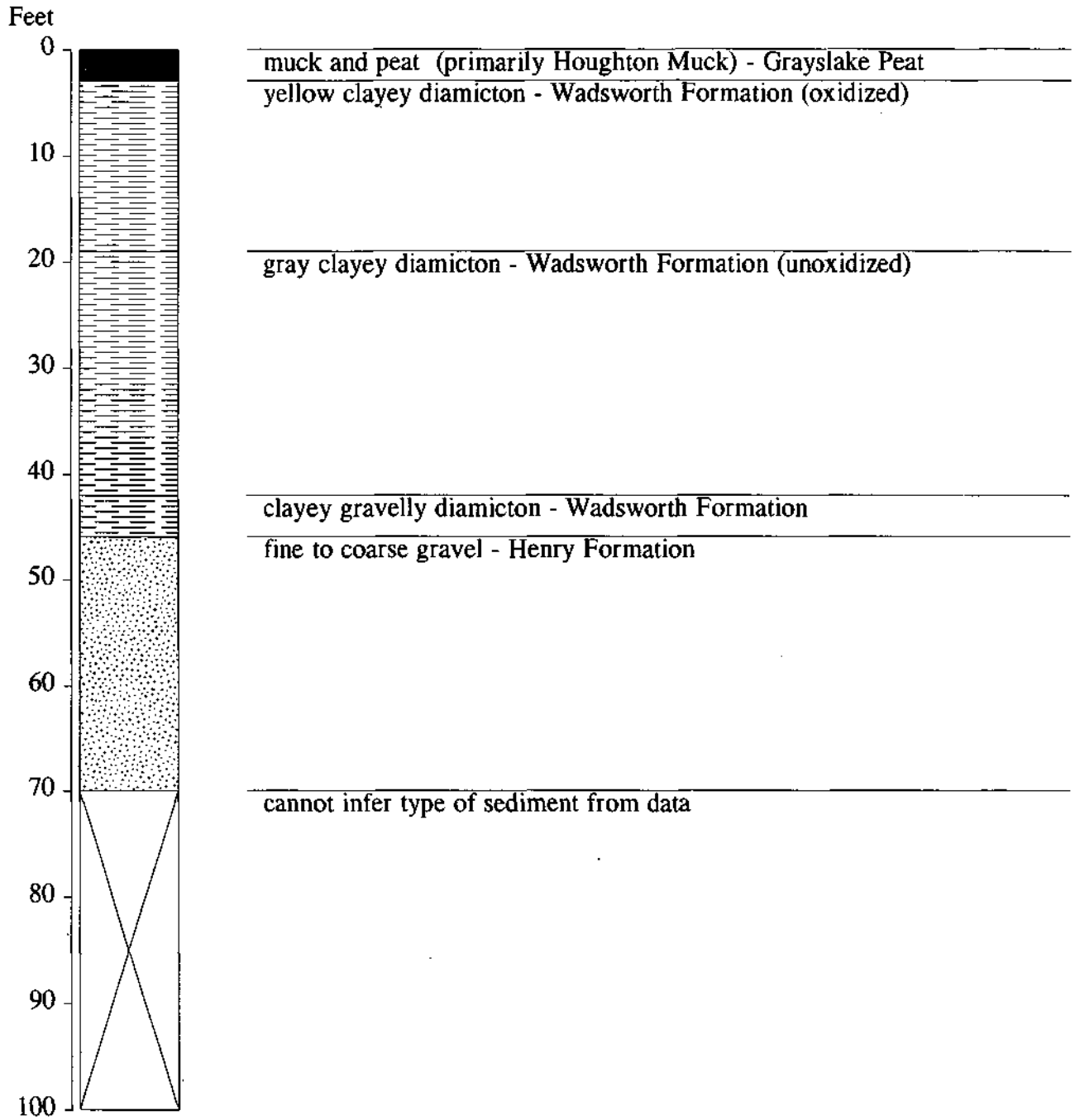
On-site geology is not expected to be sensitive, but potential contaminant sources exist upgradient.

from surface water is high.

The primary concern is the presence of a dump. Other areas of the site expected to be less vulnerable to surface contamination.

Cedar Lake Bog Nature Preserve
Lake County - 46N 10E Section 32
790

Stratigraphic Column based on log in Section 32: SE NE NW



Site #: 74 NPC #: 105 Site: Chauncey Marsh
 County: Lawrence Location: 30 5N 12W, (SW)
 Acres: 155.0 7.5 Map(s): Chauncey
 Visit date: 02/26/96 Field crew: RCB MVM
 Photos taken? Yes Number: 3
 Photo description: panoramic view from southwest to
 southeast and at the head waters of the
 Crow Branch at the sampling point

SAMPLE INFORMATION

Source: stream
 at the intersection of the Crow Branch and county
 road and 610 East; about 400 feet north of
 Chauncy Road

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/26/96		6.6	14.5	640	112

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
production wells		X	'oil well' - west and northwest of site

AGRICULTURAL

	on site	off site	location & description
row crops			fields to the west/northwest, south of Chauncey Road, and to the southeast of site; Agriculture is east of the site, but no impact is expected since it is downgradient.

above ground
disposal/dumping

X east of site and
probably not
significant since it
is downgradient

RURAL RESIDENTIAL

	on site	off site	location & description
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domestic wells
(infers septic
system)

		X	at homes to the south; few residences in the area
--	--	---	--

TRANSPORTATIONAL

	on site	off site	location & description
--	---------	----------	------------------------

dirt road

		X	on west boundary (off-site) and north of the Crow Branch (on-site)
--	--	---	---

paved road

X			Chauncey Road
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Is there potential impact from runoff? Yes.
from Chauncey Road

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is from the west to the east.

surface water

Flooding is expected to be a major input; both from
the Crow Branch and the Embarras River. The Crow
Branch begins on-site or slightly upgradient and has
flooded to an elevation of about 430 feet.

OUTPUTS

ground water

Discharge is to the east toward the Embarras River. A southerly flow component may exist in the north part of the preserve.

surface water

The surface-water outlets are the Crow Branch and the Embarras River (downgradient and off-site).

ALTERATIONS

Tiling and ditching may be present.

GEOLOGY:

Primary geologic origin(s): glacial, fluvial/alluvial

SOIL ASSOCIATION/SERIES

Soil associations are: 1) Darwin and Wabash (in the marsh and lowlands), 2) Starks, Camden, Cowling, Unity, Sexton, Petrolia, Ambraw and Wakeland (in woodlands), 3) Haymond, Marissa, and Billett (near the River), and 4) Patton (in the forest/prairie)

QUATERNARY DEPOSITS

Deposits look very sandy in the northwest corner. A great exposure occurs along the nearby Embarras River in the vicinity of the Charlottesville Cemetery (noted on topo). Cahokia Alluvium/Henry Formation.

BEDROCK

upper lithology: limestone, shale
supplemental description:

Pennsylvanian Bond Formation

depth: 95 feet

GEOMORPHOLOGY

Site is in the Embarras floodplain. The Crow Branch may flow in an abandoned meander of the Embarras River.

TOPOGRAPHY

very flat; about 5-10 feet of relief on-site

Potential for Contamination:

of ground water

see 'Additional Comments'

of surface water

see 'Additional Comments'

Initial Assessment of Site Vulnerability:

from ground water is low.

Vulnerability may be higher because of potential problems from an oil well about 1/4 mile west of the southwest corner of the site that is in the drainage of the Crow Branch.

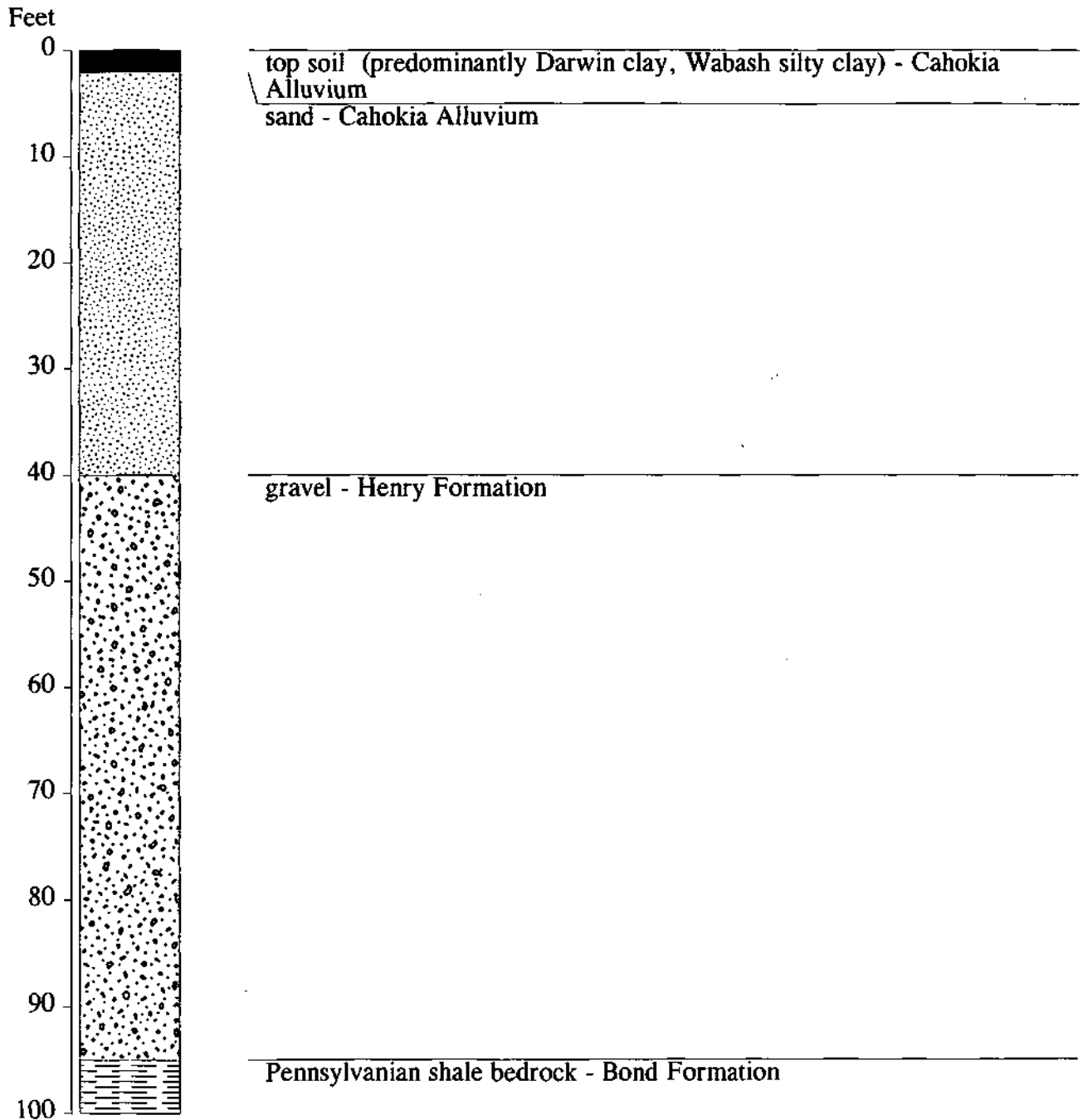
from surface water is low.

Additional Comments

Potential sources include: agricultural uses in the northern part, road runoff in southern part and oil wells to north/northwest. Water quality issues may also be important at the site because of artificial drainage.

Chauncey Marsh Nature Preserve
Lawrence County - 5N 12 W Section 30
430

Stratigraphic Column based on log in Section 30: 250'WL 220'NL



Site #: 34 NPC #: 225 Site: Churchill Prairie
 County: DuPage Location: 1 39N 10E
 Acres: 65.0 7.5 Map(s): Lombard
 Visit date: 07/11/96 Field crew: RCB MVM
 Photos taken? Yes Number: 3
 Photo description: west area of site

SAMPLE INFORMATION

Source: wetland
 in northeast corner of site (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/11/96	03:16 P	11.2	34.5	740	558

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	just south of site and at subdivisions north of site

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
other		X	'tanks' - located near the northwest corner
other		X	'power lines' - at northwest corner and across north end

AGRICULTURAL

	on site	off site	location & description
tree farms	X		A nursery is near the northeast portion of the site.

drainage wells/tile
outlets/ditches

X

Culverts run south
to north along the
south side of the
site.

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	St. Charles Road to south, I-355 to east, Swift Road to west
railway		X	on west side

Is there potential impact from runoff? Yes.
primarily from runoff entering the preserve via
culverts on the south side

RECREATIONAL

	on site	off site	location & description
trail development		X	grass-way loop
parking		X	southwest corner

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is north-south toward east branch of the DuPage
River

surface water

via culverts trending south to north in south end;
runoff via I-355; via stream starting in northeast
corner

OUTPUTS

ground water
discharge into stream

surface water
stream discharges in southwest corner

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Sawmill/Drummer in lower settings with the Morely (194)
mainly adjacent to it

QUATERNARY DEPOSITS

Equality Formation/thin Henry Formation/Wadsworth
Diamicton

BEDROCK

upper lithology: limestone

depth: 60 - 100+ feet

GEOMORPHOLOGY

Primary local feature is the East DuPage River Valley
surrounded by Wheaton Moraine. A small tributary of the
East DuPage River is on-site.

TOPOGRAPHY

slopes to south with a maximum local relief of 30 feet

Potential for Contamination:

of ground water

from residential area north of site

of surface water

from powerline R.O.W., I-355, Swift Road, St. Charles
Road and culverts

Initial Assessment of Site Vulnerability:

from ground water is moderate.

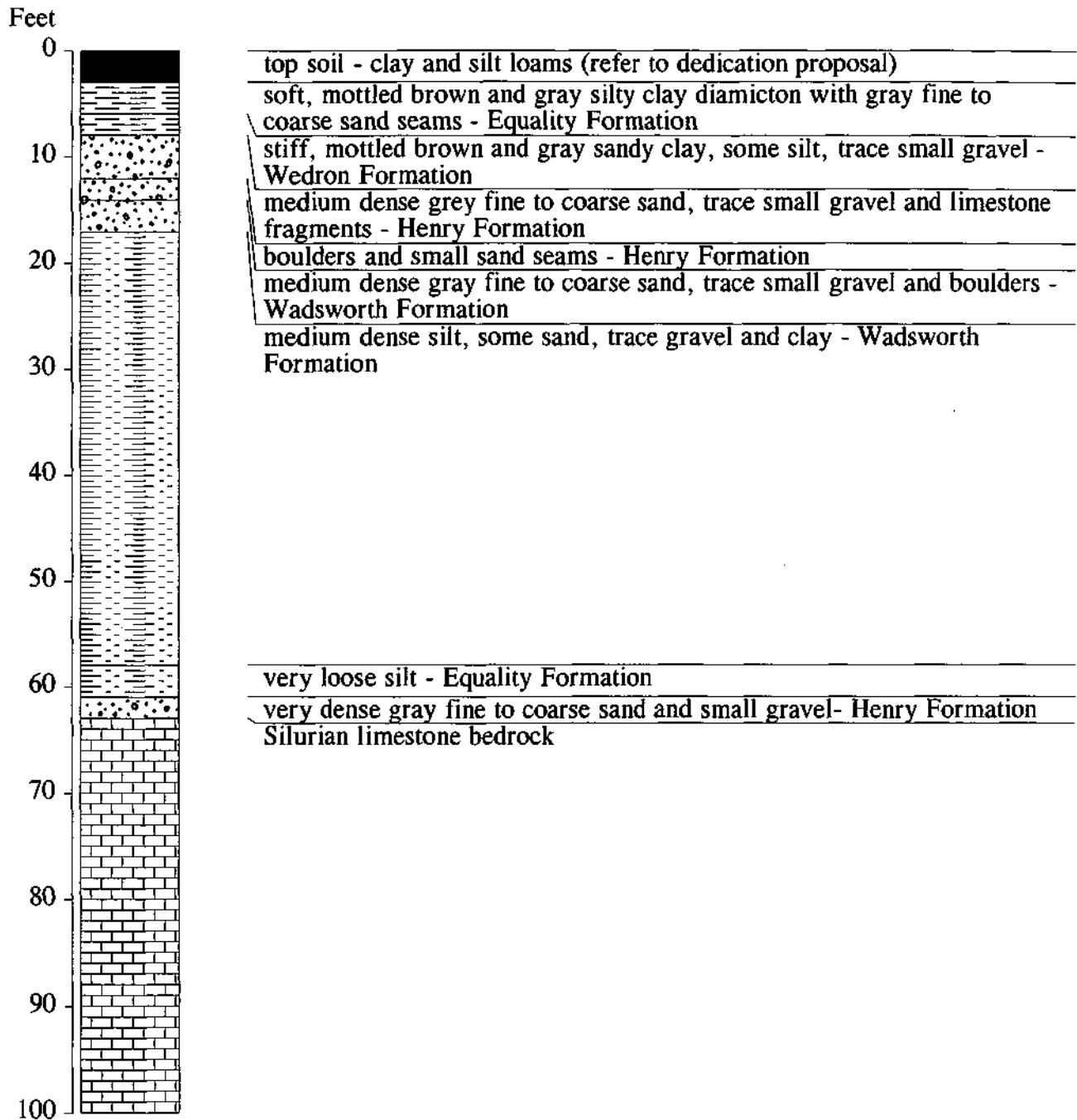
High sensitivity of sand and gravel and potential
sources were identified.

from surface water is moderate.

Culverts and runoff from roads pose potential
problems.

Churchill Prairie Nature Preserve
 DuPage County - 39N 10E Section 1
 690

Stratigraphic Column based on log in Section 1: SW NE SE - Illinois Division of
 Highways Log FA 61 over Chicago and Northwestern RR



Site #: 21 NPC #: 98 Site: Cotton Creek Marsh
 County: McHenry Location: 20 44N 9E; 29 44N 9E
 Acres: 247.4 7.5 Map(s): Wauconda
 Visit date: 06/18/96 Field crew: RAL HAW
 Photos taken? No

NO SAMPLES TAKEN

PAST ON-SITE LAND USE:

not known; probably not very different from present use

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	to northwest, southeast and south edges
underground disposal	X		Subdivisions are served by a sewage treatment plant southeast of the preserve.
domestic wells		X	Subdivisions are served by water mains.

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
pipelines		X	A 10 inch water main is expected to extend along southeast, south and southwest borders.

sewers X Raw sewage lines enter from the south and are directed to the sewage treatment plant. Sewage plant effluent is piped along southern preserve edge to the Fox River.

above ground disposal/dumping X some debris near northeast corner of the preserve (including 2 old gasoline storage tanks)

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road	X		along easternmost edge (south of Bessler Drive)
paved road		X	Vista Drive (southeast), Newport Drive (northwest), Route 176 (northeast)

Is there potential impact from runoff? Yes.
 Primary concern is runoff from Route 176 northeast of the preserve.

RECREATIONAL

	on site	off site	location & description
trail development		X	Trails are in the north (behind access point at the church) and south parts of the preserve.

parking

X at church to the north

other

X 'horses' - at D.D.T Ranch (on Roberts) and on access road to sewage treatment plant; Small feed lots exist for horses.

ON-SITE MISCELLANEOUS

location

dumping at east edge of the preserve (south of Bessler Drive)

HYDROLOGY:

INPUTS

ground water

Regional flow is from northeast to southwest. Local variation in flow direction occurs near hilly areas.

surface water

Direct drainage into the preserve occurs from Slocum Lake and Island Lake (Cotton Creek) and ponds to east (just south of Bessler Road).

OUTPUTS

ground water

Regional discharge is towards the Fox River. Seepage occurs in topographically low marshy areas.

surface water

Cotton Creek discharges into the Fox River on west edge of the preserve.

ALTERATIONS

culverts as mentioned; dams at Island Lake and Slocum Lake; One impact of dams would be potential decrease of water volume through Cotton Creek Marsh.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Fox Silt Loam to Loam [327], Houghton Peat [97],
Houghton Muck [103], Starks Silt Loam [132], Drummer
Silty Clay Loam [152] and Millbrook Silt Loam [219]

QUATERNARY DEPOSITS

Deposits are about 90-138+ feet thick with some regular
occurrence of a more clayey surficial deposit (usually
called brown till in drillers logs). Grayslake
Peat/Equality Formation/diamicton

BEDROCK

upper lithology: dolomite

depth: 90 - 138 feet

GEOMORPHOLOGY

Regionally, kame and kettle topography dominates. Slocum
and Griswold Lakes are probably kettle lakes. Cotton
Creek Marsh may even be considered an estuary of the Fox
River.

TOPOGRAPHY

There is approximately 20 feet of local relief near
Cotton Creek Marsh (about 2% grade in places). Slope is
toward Cotton Creek.

Potential for Contamination:

of ground water is high.

of surface water is high.

Initial Assessment of Site Vulnerability:

from ground water is high.

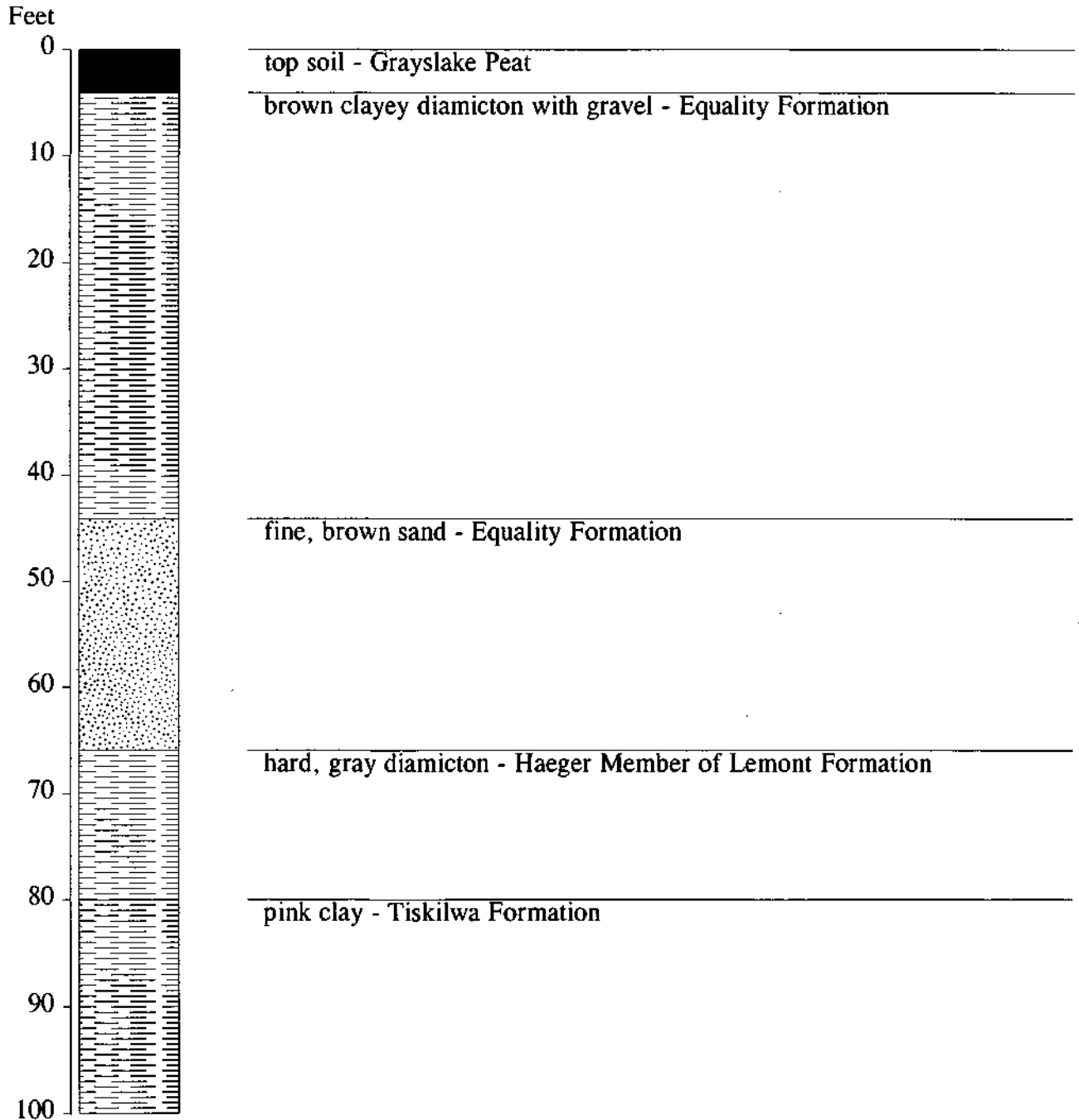
Geology is sensitive and the gradient is northeast to
southwest. Sources include a possible LUST site,
debris, and potential dumping along the east and
northeast sides of nature preserve.

from surface water is high.

Primary concerns are Route 176 and many surrounding
subdivision roads.

Cotton Creek Marsh Nature Preserve
McHenry County - 44N 9E Sections 20, 29
740

Stratigraphic Column based on log in Section 29: 1050'S 800'W SW, SE NW SW



Site #: 41 NPC #: 5 Site: Cranberry Slough
 County: Cook Location: 9 37N 12E; 10 37N 12E
 Acres: 372.0 7.5 Map(s): Palos Park
 Visit date: 07/09/96 Field crew: RCB MVM
 Photos taken? Yes Number: 3
 Photo description: kettle pond & panorama from 95th Street

SAMPLE INFORMATION

Source: stream

Sample 1: along service road on west side just
off site border

pond

Sample 2: from a kettle pond along service road
on west side just off site border

wetland

Sample 3: along 95th Street about 1/8 mile west
of Route 45

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/09/96	02:20 P	7.7	20.1	510	-133
Sample 2	07/09/96	02:30 P	8.4	27.1	190	-31
Sample 3	07/09/96	03:01 P	7.9	21.0	790	64

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
dirt road	X		on west boundary-
paved road		X	95th Street (Route 20) on north boundary; Route 45 to east

Is there potential impact from runoff? Yes.
from 95th Street and Route 45

RECREATIONAL

	on site	off site	location & description
trail development		X	extensive horse, bike, and hiking trails throughout site
other		X	'forest preserve' - surrounds site in all directions

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Regional flow is probably to the south. Ground-water inputs are local flow from uplands adjacent to site and regional flow.

surface water

Inputs are intermittent streams draining morainal slopes and overland flow.

OUTPUTS

ground water

Discharge occurs in wetlands and by regional flow off-site.

surface water

Outputs are to the south to Crooked Creek (about 1/4 mile south of site) which flows to the Cal Sag Channel.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

The Morley Silt Loam is the most prevalent soil. Muskego and Houghton Mucks occur in low areas with Peotone soils.

QUATERNARY DEPOSITS

greater than 100 feet of Wadsworth Till; Kettle lakes are present. Grayslake Peat occurs in the lowlands.

GEOMORPHOLOGY

morainal uplands with kettle lakes

TOPOGRAPHY

steeply sloped morainal terrain; Within the preserve relief is 55 feet (710 feet - 655 feet).

Potential for Contamination:

of ground water

very little potential is expected

of surface water

from runoff from 95th Street and Route 45

Initial Assessment of Site Vulnerability:

from ground water is very low.

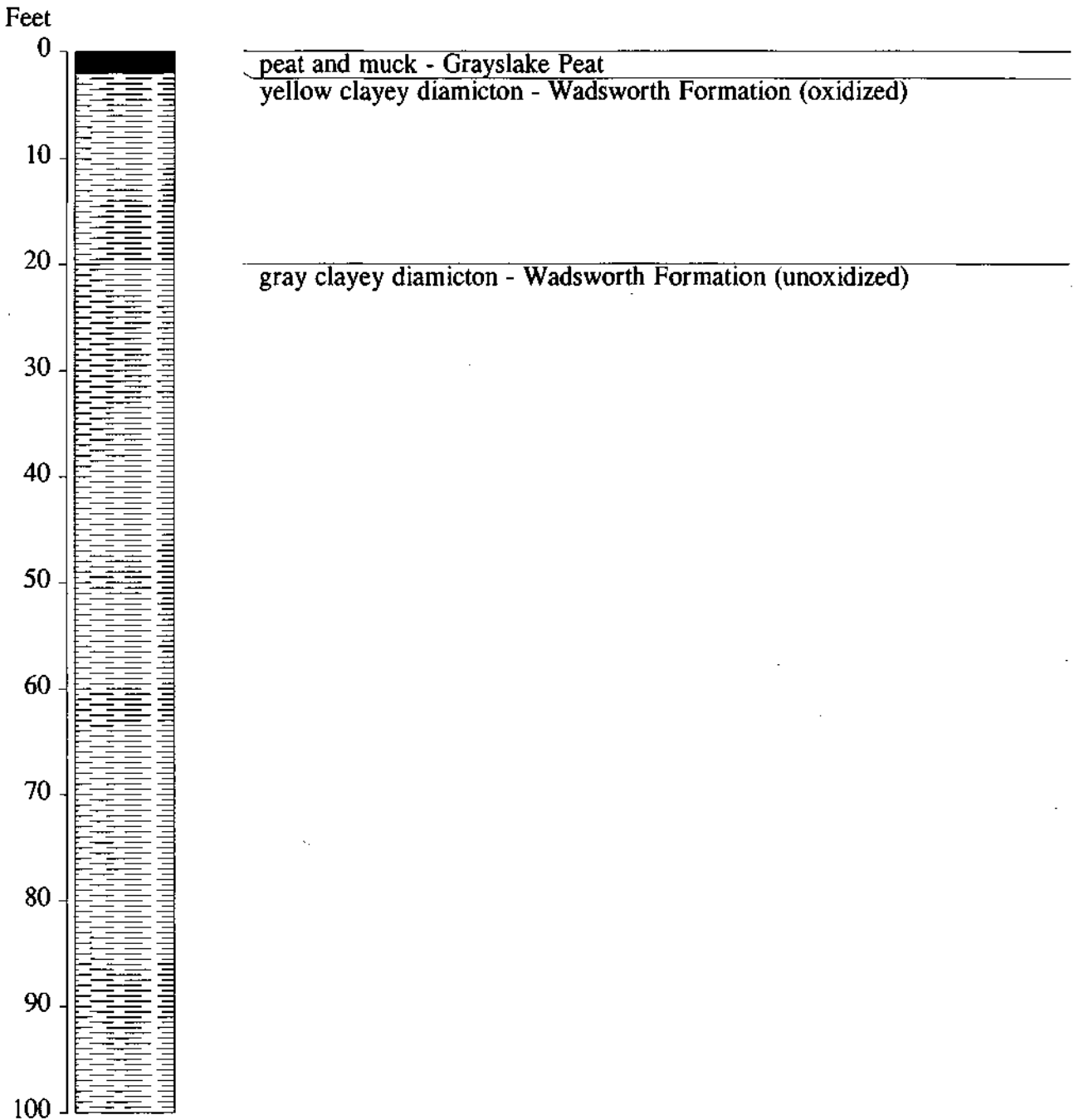
Thick till is beneath the site and surrounding areas are mainly part of a forest preserve.

from surface water is low.

There is some runoff from roads. Nitrates from horse manure may also be problematic.

Cranberry Slough Nature Preserve
Cook County - 37N 12E Sections 9,10
675

Stratigraphic Column based on log in Section 10: SW NE NE



Site #: 82 NPC #: 31 Site: Cretaceous Hills
 County: Massac Location: 15 15S 6E, (NW); 16 15S 6E
 Acres: 240.0 7.5 Map(s): Paducah NE
 Visit date: 02/27/96 Field crew: RCB MVM
 Photos taken? Yes Number: 2
 Photo description: at both sampling locations

SAMPLE INFORMATION

Source: stream

The location of sample 1 is noted on the topo.
 seep

Sample 2 was from a wet area in a shallow
 drainageway (noted on topo).

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	.02/27/96		7.3	13.4	80	104
Sample 2	02/27/96		6.3	15.4	60	121

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

NO AGRICULTURAL LAND USES NOTED

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (infers septic system)		X	old (pre-1920) dug wells along the west side (off-site)
other		X	'above ground disposal/dumping' - at historic homes to the west

NO TRANSPORTATIONAL LAND USES NOTED

RECREATIONAL

	on site	off site	location & description
trail development	x	X	'wagon trails' and walking trails

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Seeps along the hillslopes presumably occur at material contacts. They were difficult to find because of the vague description on file.

surface water

Stream flow to the north occurs in the main valley and other intermittent streams also enter the preserve. A drainage map is included in the site master plan on file.

OUTPUTS

ground water

Flow off the site occurs due to local gradients and seepage to streams.

surface water

Streams which exit the preserve are tributaries of Barren Creek.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial

SOIL ASSOCIATION/SERIES

Sharon, Hosmer, Birds, Wellston, Zanesville, Belknap, Burnside, Brandon, Saffel, and Lax series are present.

QUATERNARY DEPOSITS

Cahokia Alluvium/Cretaceous bedrock (in valley) and Peoria Silt/Cretaceous bedrock (in uplands)

BEDROCK

upper lithology: sandstone
supplemental description:

Mississippian sandstone

depth: 50 feet

GEOMORPHOLOGY

steep valleys (bedrock valleys) and floodplain

TOPOGRAPHY

steep valleys (all forested); Total relief in the
preserve is nearly 150 feet.

Potential for Contamination:

of ground water

see 'Additional Comments'

of surface water

see 'Additional Comments'

Initial Assessment of Site Vulnerability:

from ground water is very low.

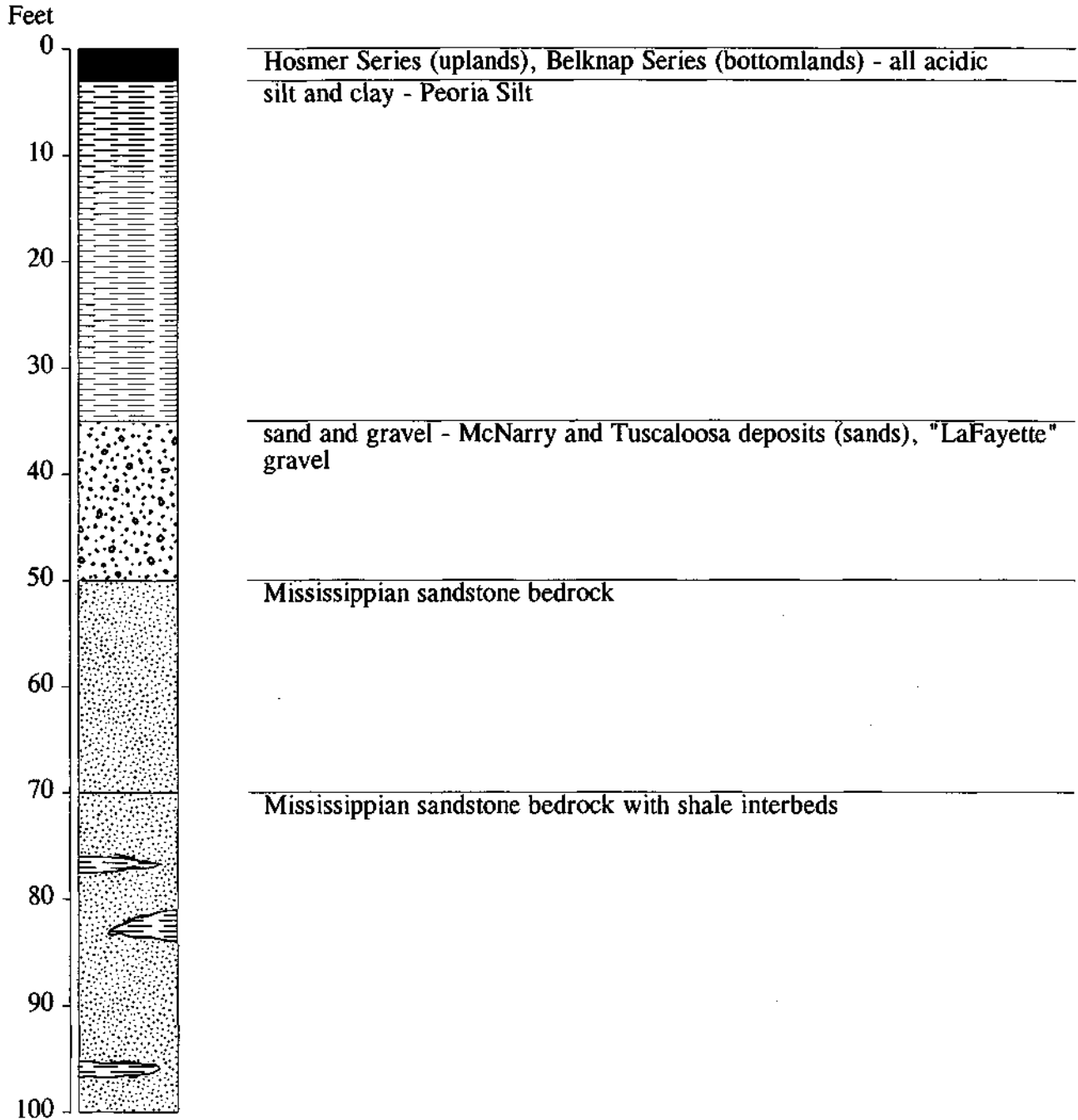
from surface water is very low.

Additional Comments

No sources of contamination were identified.

Cretaceous Hills Nature Preserve
Pope County 15S 6E Sec. 15; Massac County 15S 6E Sec. 16
440

Generalized Stratigraphic Column based on log in Section 16:SW SW NW
supplemented by information in dedication proposal



Site #: 73 NPC #: 127 Site: Dean Hills
 County: Fayette Location: 10 8N 2E, (NE)
 Acres: 70.0 7.5 Map(s): Herrick
 Visit date: 02/29/96 Field crew: RCB MVM
 Photos taken? Yes Number: 2
 Photo description: at exposure next to Becks Creek (noted on
 topo)

SAMPLE INFORMATION

Source: seep

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/29/96		8.5	0.8	470	

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
other		X	trash; old tank car from train

AGRICULTURAL

	on site	off site	location & description
tree farms		X	Tree farm located on west slope of the kame and west of the site. Agricultural chemicals may be used here.
drainage wells/tile outlets/ditches			Pipes going from wells at the top of the kame irrigate trees.

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (infers septic system)		X	south of west boundary (old wells); abandoned septic system ?
other		X	'dumping' - at kame top and on northwest corner; some agricultural chemicals containers

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	to the west
gravel road		X	the southwest and southeast

Is there potential impact from runoff? No.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Recharge occurs through sand and gravel on the kame. Flow is generally to the northeast toward Becks Creek. Local flow directions will vary depending on local topography.

surface water

Inputs include overland flow and flow through well developed channels which trend southwest to northeast. Becks Creek flows through the site.

OUTPUTS

ground water

Discharge occurs to Becks Creek. Since the nature preserve is on the north side of the kame, the primary output may be to Becks Creek.

surface water

Discharge occurs at Becks Creek to the southeast and possibly at the main ravine which is on-site.

ALTERATIONS

none noted on-site; Off-site alterations may have occurred to the west at the tree farm.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Hickory, Sharon, Drury soil series are present (old survey).

QUATERNARY DEPOSITS

At the exposure, 3 feet of loess overlies about 30 feet of sand and gravel which overlies Vandalia Till.

BEDROCK

upper lithology: shale
supplemental description:

Mattoon Formation

depth: 45 feet

GEOMORPHOLOGY

The primary feature on-site is a kame. The kame is very dissected and is approximately 1 square mile in area and square shaped.

TOPOGRAPHY

steep dissected kame with about 55 meters (180 feet) of relief within the preserve

Potential for Contamination:

of ground water

from dumping and tree farm activity

of surface water

from river flooding

Initial Assessment of Site Vulnerability:

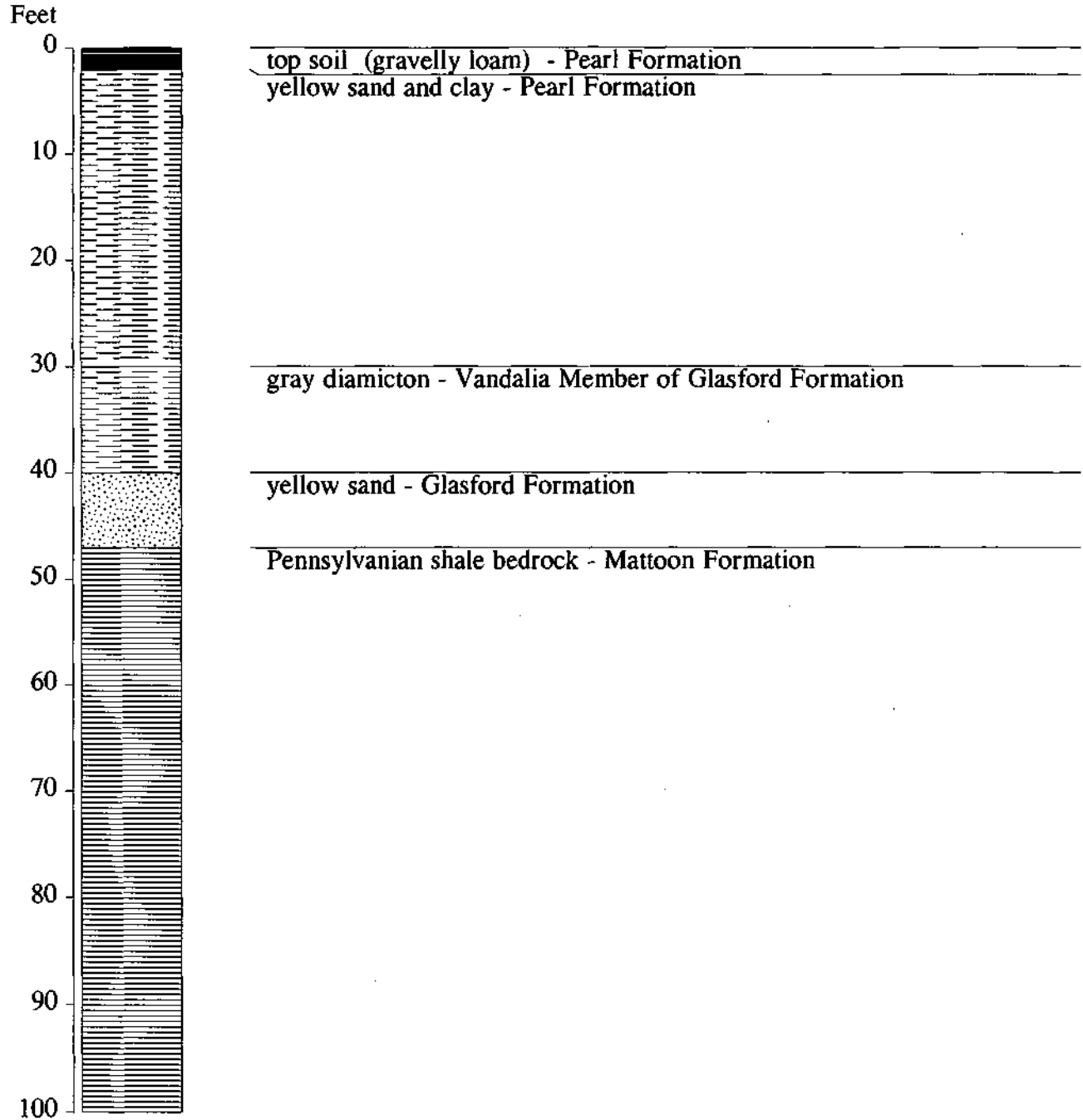
from ground water is moderate.

Agricultural chemicals associated with tree farming
and dumping at the top of the kame are potential
problems.

from surface water is low.

Dean Hills Nature Preserve
Fayette County - 8N 2E Section 10
700

Stratigraphic Column based on log in Section 10: 107°N 113°W of SE/c, SW SW NE



Site #: 29 NPC #: 128 Site: Elizabeth Lake
 County: McHenry Location: 3 46N 8E
 Acres: 172.6 7.5 Map(s): Richmond
 Visit date: 05/08/96 Field crew: RAL SCM
 Photos taken? No

SAMPLE INFORMATION

Source: pond

from southern end of pond extending across
 southern border of nature preserve (noted on
 topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/08/96	10:40 A	7.9	10.8	620	0.4

PAST ON-SITE LAND USE:

Pasture off-site, along the south edge and at the
 northwest corner of the preserve (see dedication
 proposal).

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	Dense urban and suburban development in Twin Lakes, WI extends around the north, east and west sides of Elizabeth Lake, which borders the marshes included in the nature preserve.
domestic wells		X	see 'lawns' above
underground disposal		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
sewers		X	Twin Lakes, WI, on north, east and west sides of Lake Elizabeth, which is north of the nature preserve.
other		X	'gas stations' - north of site in Twin Lakes, WI
other		X	'Extech Plastics' - planned to be on the northwest side of Route P, just south of the IL/WI border

AGRICULTURAL

	on site	off site	location & description
row crops		X	west, south and southeast of nature preserve
pasture		X	see 'row crops' above

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	noted on sketch on original field sheet
paved road		X	

Is there potential for runoff? Yes.

Minor runoff from the Richmond Hunt Club access road might enter wetlands/ponds along the south margin of the preserve, but this would probably not contain many contaminants. Runoff from paved roads in Twin Lakes which enters Lake Elizabeth might affect water quality in the preserve, which includes wetlands bordering the lake.

RECREATIONAL

	on site	off site	location & description
other		X	'sportsmen's club' - Richmond Hunt Club adjoins the preserve to the south. Only observed potential source was a pit toilet near the south border of the preserve. There may be buried tanks, though evidence of these was not observed. Numerous pens for raising turkeys and pheasants and dumping on the hunt club property were observed. Dumping is documented later.

ON-SITE MISCELLANEOUS

	location
dumping	on Hunt club property south of nature preserve; included 55 gallon drums, detergent bottles, etc.

HYDROLOGY:

INPUTS

ground water

In west part of preserve, topography indicates eastward or southeastward ground-water flow from uplands. In southeast part, northwest flow from uplands is expected. In northeast part, ground-water flow may be more southwesterly because of Elizabeth Lake.

surface water

Intermittent streams enter the sedge meadows at the southeast and southwest corners. Elizabeth Lake and associated streams primarily enter in the northeast. A channel also appears to enter from the southeast. Other intermittent streams probably enter in the west.

OUTPUTS

ground water

Discharge is to the south along the tributary valley that eventually connects with the valley of the North Branch Creek.

surface water

Discharge occurs through Elizabeth Lake outlet, which is dammed just south of the preserve.

ALTERATIONS

Channelization may increase flow toward Elizabeth Lake. Damming increases water levels upstream.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, lacustrine

SOIL ASSOCIATION/SERIES

103 - Houghton Muck, 82 - Millington Loam, and 219 Millbrook Silt Loam

QUATERNARY DEPOSITS

Grayslake Peat/Henry Formation/Tiskilwa Member

BEDROCK

upper lithology: limestone

depth: 150 - 160 feet

GEOMORPHOLOGY

Elizabeth Lake exists in a valley bounded by a 50-70 foot deep valley that has irregularly shaped valley walls. Thick glacial deposits form the uplands.

TOPOGRAPHY

Total relief in Section 3 is about 75 feet.

Potential for Contamination:
of ground water is moderate.

of surface water is moderate.

Initial Assessment of Site Vulnerability:
from ground water is moderate.

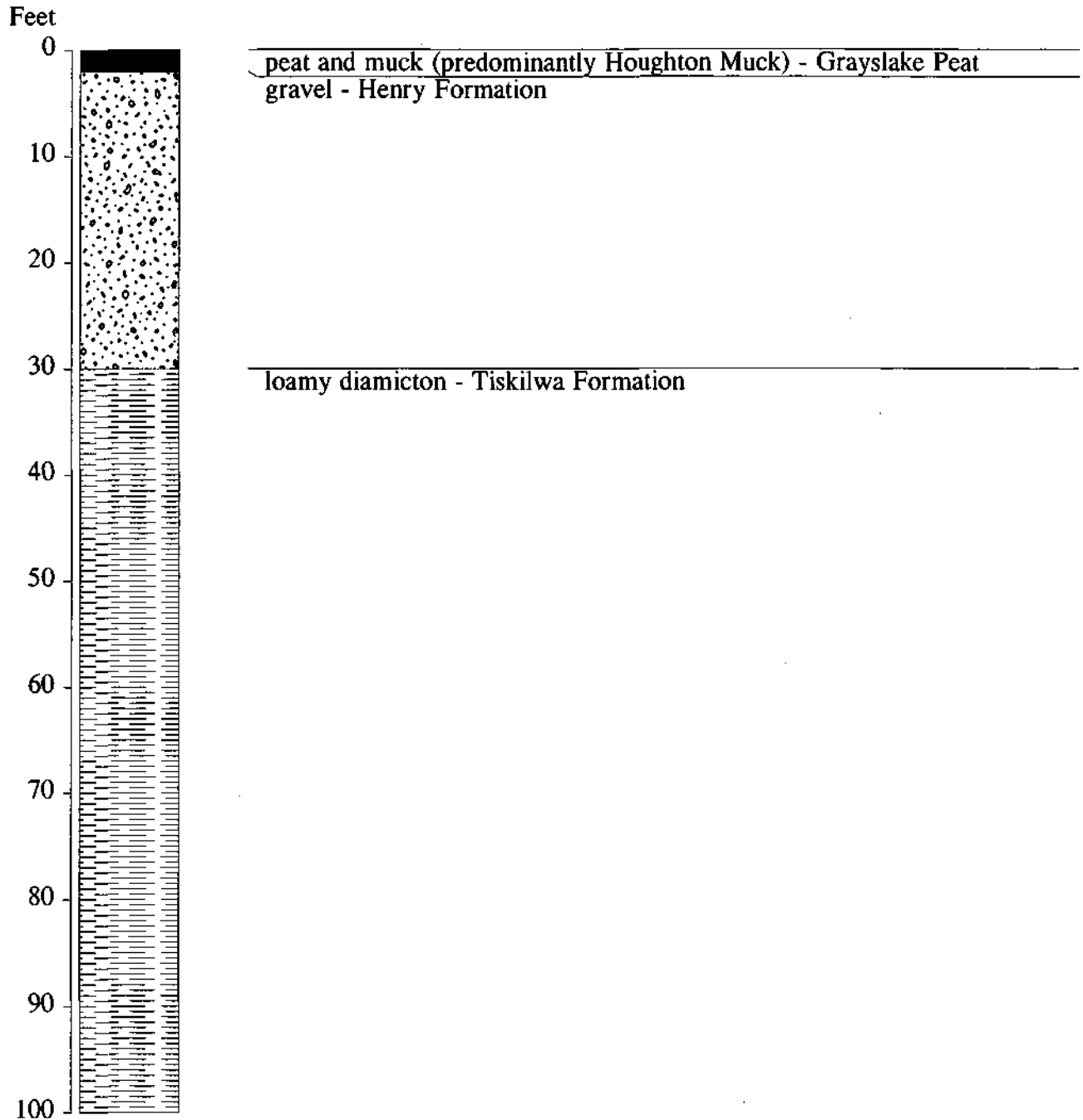
from surface water is moderate.

Additional Comments

Surface water is expected to be the primary path by which contaminants would reach the preserve; either from streams entering the preserve from the west or from Elizabeth Lake and the stream that flows south from it. Development in the Twin Lakes area, just north of the preserve may influence chemistry of water in the floodplain north of the preserve. Most residential development is in Twin Lakes, WI. Scattered residences are present around the southern end of Elizabeth Lake somewhat closer to the preserve.

Elizabeth Lake Nature Preserve
McHenry County - 46N 8E Section 3
800

Stratigraphic Column based on log in Section 2: NE NE NW



Site #: 26 NPC #: 235 Site: Exner Marsh
 County: McHenry Location: 23 43N 7E; 26 43N 7E
 Acres: 117.0 7.5 Map(s): Crystal Lake, Huntley
 Visit date: 06/20/96 Field crew: RAL HAW
 Photos taken? Yes Number: 2
 Photo description: R7P5 looks west across the largest water body at houses at south edge of Heron Pond Subdivision (at north edge of marsh). R7P6 looks east at same location looking at subdivision encroaching on east edge of marsh.

SAMPLE INFORMATION

Source: wetland

along north edge of marsh from stagnant water surrounded by cattails; at northeast shore of largest water body in marsh (noted on Huntley topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	06/20/96	04:45 P	7.6	27.5	340	55

PAST ON-SITE LAND USE:

Basically, the site has always been recognized as a marsh. Prior to acquisition by the MCCD, the marsh was used for hunting and fishing.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	Subdivisions are immediately adjacent to the north edge of the marsh. Homes are on city sewer and water.

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	Areas to the south are still farmed but probably won't be for long as these farms have been platted for subdivision. These areas are expected to be downgradient.

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	Huntley Crystal Lake Road borders the west side of the marsh. This is a well used road.

Is there potential impact from runoff? Yes.
Certainly spills and deicing salts on Huntley Crystal Lake Road could have an impact (sketch on file).

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Ground-water inputs are not obvious especially because of flat topography. Gradients are likely to be low and probably very local.

surface water

Surface water enters the marsh from the surrounding uplands probably on all sides.

OUTPUTS

ground water

Ground-water outputs, like inputs, are difficult to assess. The primary output may be evapotranspiration unless there is downward ground-water movement within the preserve.

surface water

The marsh does not have a surface outlet. There may be an intermittent outlet to the north which eventually goes northwest to the Kishwaukee River.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

The wetland is composed almost entirely of Lena Muck. Lowland areas surrounding the marsh are covered with Harpster silt loam and Drummer and Peotone silty clay loams. Upland soils include Varna, Saybrook, and LaRose silt loams.

QUATERNARY DEPOSITS

Grayslake Peat/Yorkville Diamicton/Henry Formation/Tiskilwa Member

BEDROCK

upper lithology: shale

depth: 170 - 200 feet

GEOMORPHOLOGY

The wetland lies in a shallow glacial lake bed. Bordering uplands consist of till and outwash deposits. Outwash deposits lie to the south. To the east, northeast, west and northwest are clayey tills on surrounding moraines.

TOPOGRAPHY

Gently rolling to flat; The maximum elevation is 900 feet and the minimum is 880 feet.

Potential for Contamination:

of ground water is moderate.

Housing development is widespread, but does not use septic or private wells. Agricultural chemicals used on lawns could be transported to ground water and then to marsh.

of surface water is moderate.

Runoff from lawns may present chemical or siltation problems. Highway runoff may also present problems.

Initial Assessment of Site Vulnerability:

from ground water is moderate.

See 'Additional Comments/Information'

from surface water is moderate.

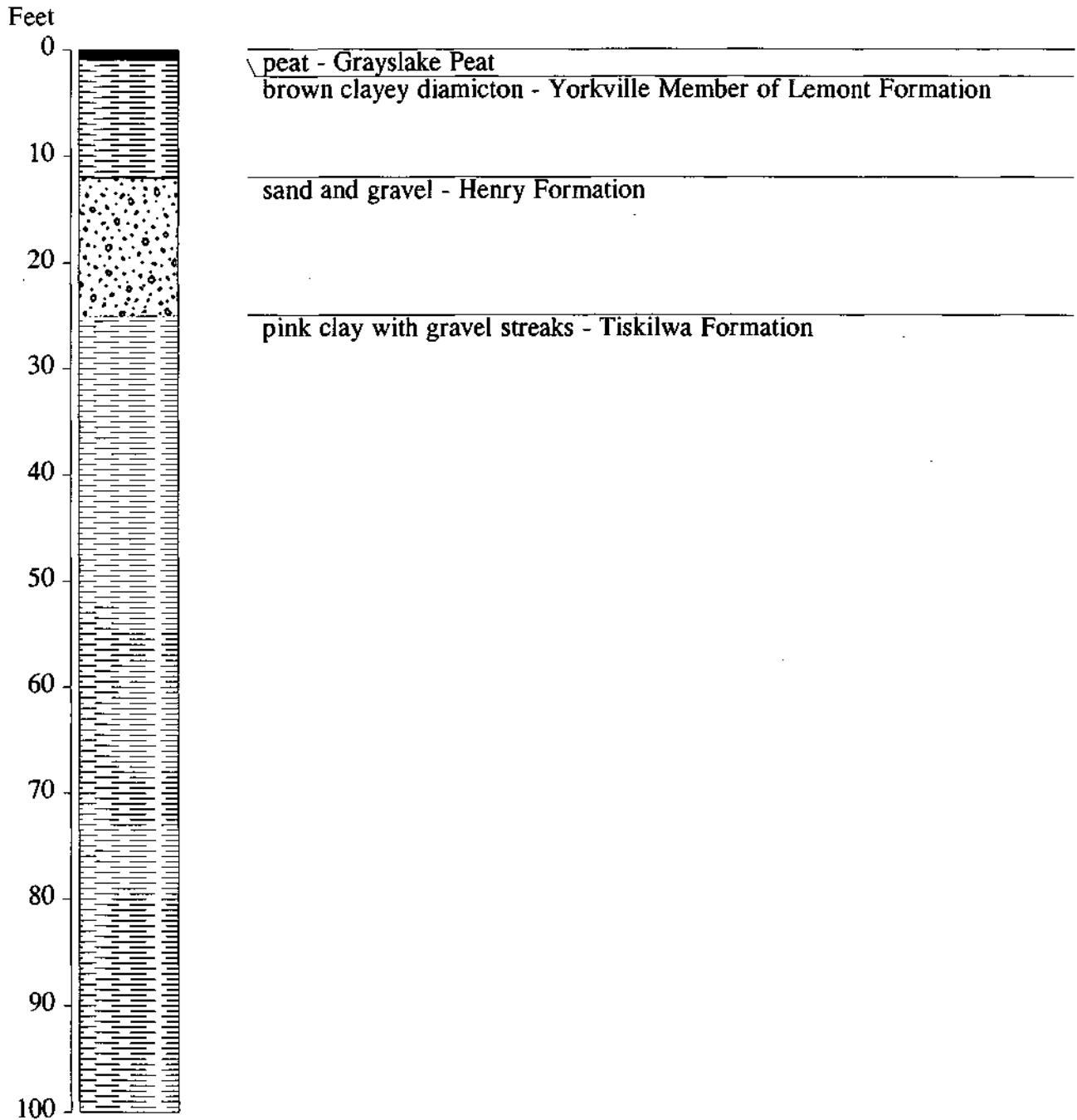
Development pressures could present problems to both surface water and ground water.

Additional Comments

Geology is not especially sensitive except possibly to the south. The area to the south is currently farmed, but is to be subdivided. Development by housing and paving with streets, etc. may disturb recharge quantity more or at least as much as quality. In a protection sense, this may be just as important to the presence of the wetland.

Exner Marsh Nature Preserve
McHenry County - 43N 7E Sections, 23, 26
880

Stratigraphic Column based on log on Section 23: NE SW SE



Site #: 8 NPC #: 233 Site: Farm Trails North
 County: Lake Location: 3 43N 9E
 Acres: 20.0 7.5 Map(s): Barrington
 Visit date: 06/19/96 Field crew: RAL HAW
 Photos taken? No

SAMPLE INFORMATION

Source: other

'culvert inlet' - draining water under River Road
 near Roberts Road at northwest corner of marsh
 (noted on topo); Movement of water was to the
 east draining toward the Fox River.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	06/19/96	11:30 A	7.3	21.0	580	-197

PAST ON-SITE LAND USE:

Property was acquired by Citizens for Conservation in
 1981. Prior use included agricultural use for grazing of
 livestock.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	Large lot subdivisions surround the fen on the east and south sides and north across Roberts Rd.
domestic wells underground		x	see 'lawns' above
disposal		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
stockpiles			
building materials		X	stockpile of fill materials (sand, dirt) on vacant lot (?) approximately 1000 feet east of fen at entrance to subdivision
pipelines	x		Gas pipeline markers were noted along Roberts Rd. immediately adjacent to north edge of fen. Other utilities are also present, (i.e., power, phone).

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	The site is immediately adjacent on the north side to Roberts Road which has heavy traffic. River Road on the west boundary also has fairly heavy traffic. There is evidence of recent addition of gravel to shoulders of River Road.

Is there potential for runoff? Yes.

Obvious potential is from immediately adjacent Roberts and River Roads (sketch on file). Spills and deicing salts are potential problems.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Obviously depth to water within the preserve is very shallow or it wouldn't be a 'wetland'. There are no wells within the preserve. Wells drilled on uplands for homes show depths to water from 5 to 50 feet, probably depending on topographic location (i.e., elevation) and the depth of the unit penetrated. Recharge must be occurring on surrounding uplands and discharge to the fen. Uplands surround the south, north and east sides of fen.

surface water

Like ground water, surface drainage must move off surrounding uplands to the fen. Topographic relief to south and east can be steep (greater than 10%).

OUTPUTS

ground water

Recharge from the uplands to the fen probably discharges to east or east-southeast to the Fox River.

surface water

Flow noted coming out of a culvert to the east under River Road. Eventual discharge is to the Fox River.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Dominant soil is Houghton Muck containing much graminoid/cyperoid peat. Peatone silty clay loam is also present. Upland soils (off-site) include Hennepin loam & Zurich silt loam.

QUATERNARY DEPOSITS

Wadsworth Diamicton is from 10 to over 50 feet thick, depending on location topographically, and overlies sand or sand and gravel potentially greater than 50 feet thick. Wadsworth Member of Wedron Formation noted by Barnstable.

BEDROCK

upper lithology: limestone, dolomite

depth: 140 - 168 feet

GEOGRAPHY

According to the dedication proposal, the fen occupies the east central portion of an elongate deep glacial kettle filled with Grayslake Peat. Steeply sloped ridges of the Fox Lake Moraine border the kettle. To the northeast, a small lobe of upland drift slopes gradually to the wetland.

TOPOGRAPHY

Topography within the fen is fairly flat. It is a low-lying area surrounded by fairly steep terrain. Topography rises from 735 feet at northwest corner of fen to 780 feet on surrounding uplands. Slopes approach about 13% ($2/15=0.133$).

Potential for Contamination:

of ground water is low to moderate.

Sand and gravel does tend to have some overlying fine grained material especially on uplands where the septic systems reside.

of surface water is high.

Perhaps the greatest threat is from spills and deicing salts from adjacent roads.

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

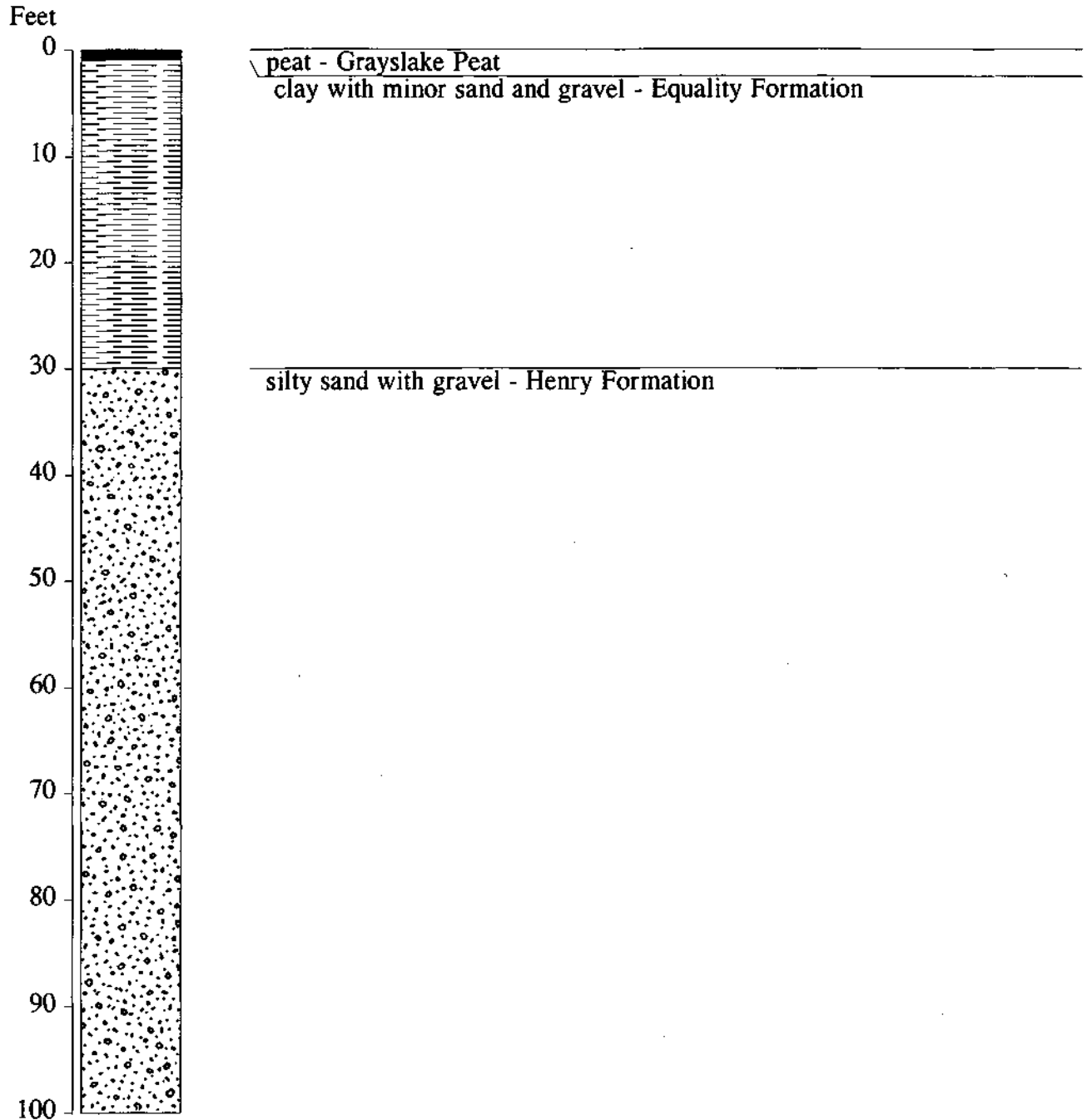
Septic systems are abundant, but lots tend to be large and uplands contain fine-grained material which will help to attenuate system discharges.

from surface water is high.

Greatest concern is runoff from highways (Roberts and River Roads).

Farm Trails North Nature Preserve
Lake County - 43N 9E Section 3
750

Generalized Stratigraphic Column based on logs from Section 3



Site #: 32 NPC #: 196 Site: Ferson's Creek
 County: Kane Location: 21 40N 8E; 22 40N 8E
 Acres: 46.1 7.5 Map(s): Geneva
 Visit date: 07/11/96 Field crew: RCB MVM
 Photos taken? Yes Number: 3
 Photo description: panorama of site with, bridge, marsh,
 etc.

SAMPLE INFORMATION

Source: wetland
 about half way between west border and Fox River
 (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/11/96	04:32 P	9.0	21.4	760	580

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	west of site and west of Route 31

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	Route 31 west of site

Is there potential impact from runoff? Yes.
 Runoff from Route 31 is possible since it abuts the site to the west.

RECREATIONAL

	on site	off site	location & description
trail development	x		throughout preserve
parking	X		off of Route 31

ON-SITE MISCELLANEOUS

location
flood debris along Ferson Creek

HYDROLOGY:

INPUTS

ground water

Flow is west to east from the morainal uplands to the Fox River.

surface water

Inputs are overland flow from uplands to west, Ferson Creek which borders site to south, and Fox River which borders site to east.

OUTPUTS

ground water

Outputs are discharge to the fen and Fox River.

surface water

Outputs are Ferson Creek and Fox River. Also, a drainageway through the fen is in south part of site.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Houghton Muck, Otter silt loam, Drummer, and Fox

QUATERNARY DEPOSITS

Cahokia (0-30 ft.)/ Henry (30-50 ft.)/bedrock

BEDROCK

upper lithology: limestone

depth: 60 - 100+ feet

GEOMORPHOLOGY

The site is on an outwash terrace with a moraine to the west.

TOPOGRAPHY

low relief with gentle slope to Fox River; about 15-20 feet of relief in west portion of site

Potential for Contamination:

of ground water

Route 31 and residential area are primary concerns.

of surface water

Concerns are runoff from Route 31 and the residential areas west of the site, as well as, flooding from Ferson Creek and the Fox River.

Initial Assessment of Site Vulnerability:

from ground water is moderate.

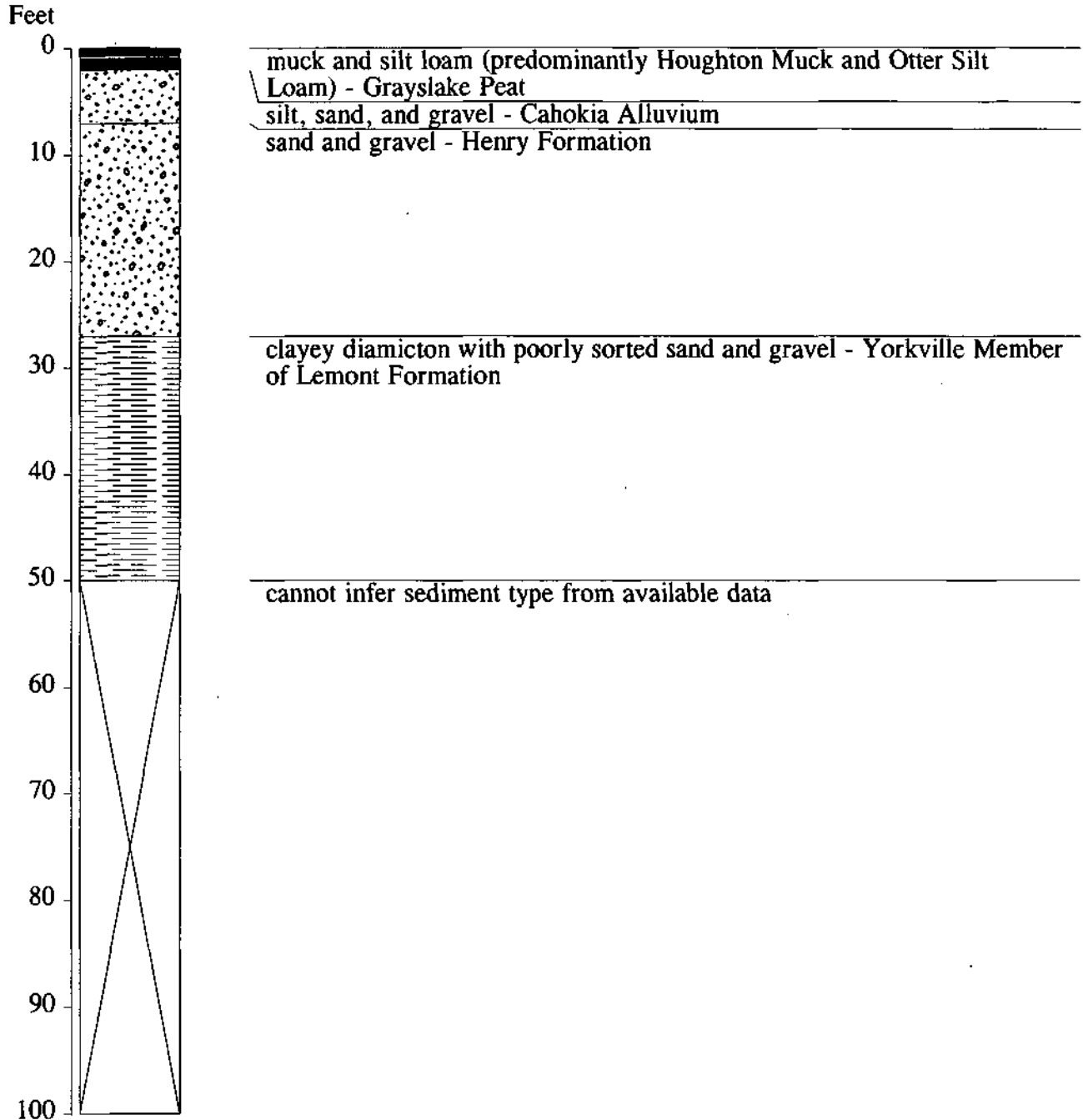
There is high geologic sensitivity of Cahokia Alluvium and Henry Formation deposits underlying a large fen which is immediately downgradient of Route 31 and residential subdivisions.

from surface water is moderate.

Possible problems from: flooding of Ferson Creek (which extends up into site), flooding of the Fox River, runoff from Route 31, and runoff from the area drained by Ferson Creek.

Ferson's Creek Nature Preserve
Kane County - 40N 8E Sections 21, 22
690

Stratigraphic Column based on geologic information in dedication proposal
supplemented by local well logs



Site #: 77 NPC #: 177 Site: Fogelpole Cave
 County: Monroe Location: 7 4S 9W, (SE SE); 8 4S 9W
 Acres: 27.3 7.5 Map(s): Renault
 Visit date: 02/28/96 Field crew: RCB MVM
 Photos taken? Yes Number: 2
 Photo description:

SAMPLE INFORMATION

Source: stream

from water (from seeps (??) flowing into a
 sinkhole (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/28/96		9.2	7.8	460	45

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	surrounding the entire site

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (infers septic system)		X	at farmsteads

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	county road

Is there potential impact from runoff? Yes.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow direction is probably south to southeast toward the Mississippi River. Recharge occurs through the karst limestone surrounding the site.

surface water

Numerous drainageways from the surrounding agricultural land go to the main sinkhole on-site.

OUTPUTS

ground water

Discharge occurs into the conduits of the cave system which discharges off-site.

surface water

Surface water enters the cave system on-site and is carried off-site through the karst network.

ALTERATIONS

some blocking at cave entrance

GEOLOGY:

SOIL ASSOCIATION/SERIES

Alford and Muren soil associations are present.

QUATERNARY DEPOSITS

Peoria Silt/Vandalia Diamicton/limestone (karst)

BEDROCK

upper lithology: limestone
supplemental description:

Upper units include the St. Louis Limestone, Salem Limestone, Renault Formation and Aux Vases Sandstone

depth: 30 feet

GEOMORPHOLOGY

karstic; The site is in a sinkhole with a cave entrance at bottom of the sinkhole.

TOPOGRAPHY

The rolling karst topography is prevalent on the Renault Quad. On-site relief is up to 60 feet.

Potential for Contamination:

of ground water is moderate to high.

see 'Additional Comments'

of surface water

see 'Additional Comments'

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

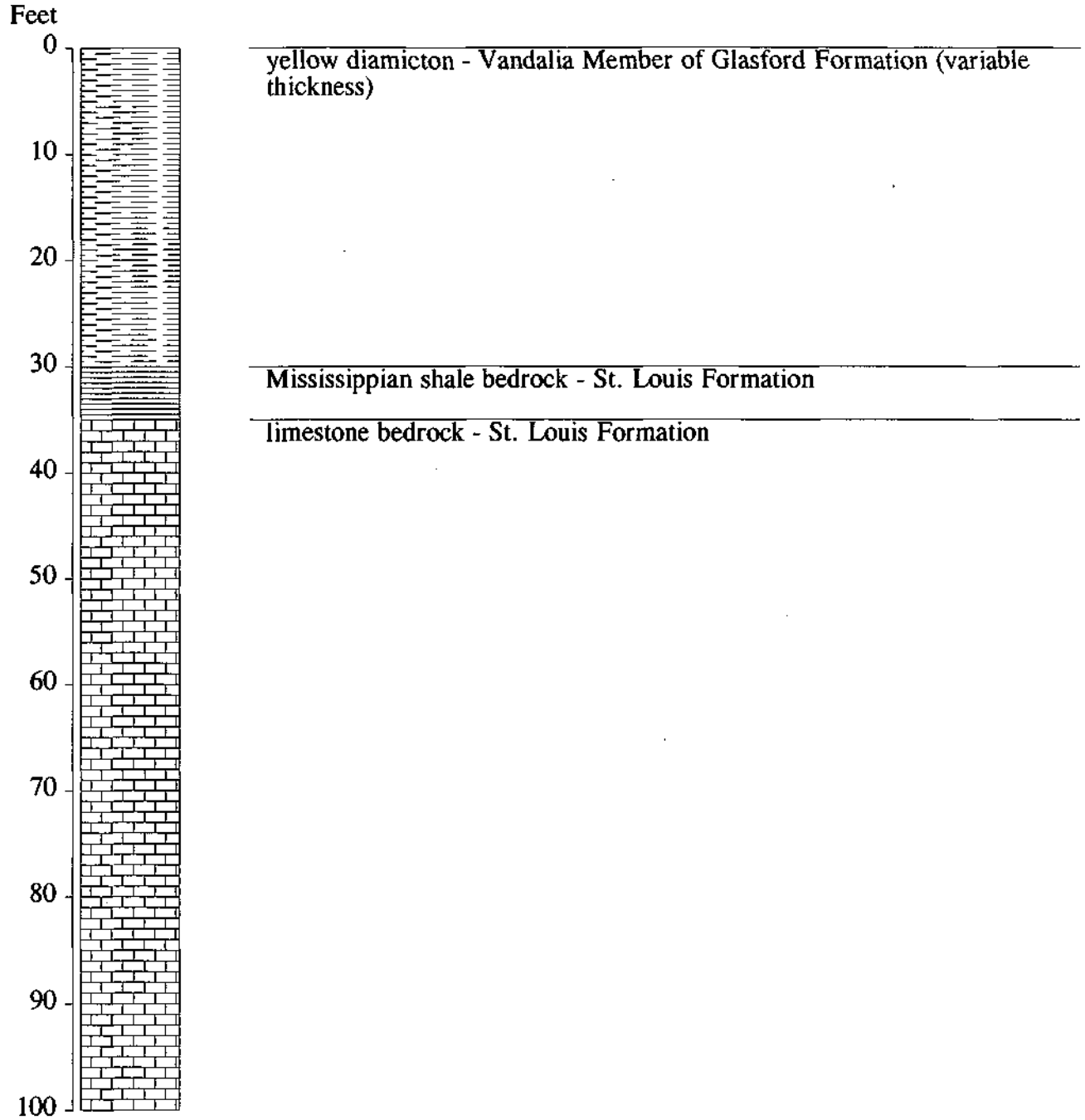
from surface water is moderate to high.

Additional Comments

Potential contaminants include nitrates and pesticides via runoff from surrounding agricultural land. Karst setting makes transport (in ground water or surface water) potentially very rapid. Delicate plant and animal species in the cave system plus rapidity of transport of agricultural chemicals through the karst system to the site are problems. Sam Panno (ISGS) may have additional data on water chemistry and flow for this site.

Fogelpole Cave Nature Preserve
Monroe County - 4S 9W Sections 7,8
640

Generalized Stratigraphic Column based on logs in Sections 7 and 8



Site #: 69 NPC #: 113 Site: Forest Glen Seep
 County: Vermilion Location: 13 18N 11W, (NE NW NW)
 Acres: 15.0 7.5 Map(s): Danville SE
 Visit date: 09/04/96 Field crew: RCB RAL MJM
 Visit date: 06/28/95 Field crew: RCB RAL HAW MVM
 Photos taken? Yes Number: 3
 Photo description: pasture looking west, stream entering
 site, and seep area on-site

SAMPLE INFORMATION

Source: stream
 at southwest site corner; The stream enters in
 the southwest corner and flows along the south
 site border.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	09/04/96	11:30 A	8.0	18.9	670	51

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	about 1/8 mile west of site

AGRICULTURAL

	on site	off site	location & description
row crops		X	north of site
pasture		X	adjacent to the west and in use
livestock		X	grazing off of west site border

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (infers septic system)		X	approximately 1/2 mile north of site

TRANSPORTATIONAL

	on site	off site	location & description
dirt road		X	Farm access roads are on the west and north site borders.

Is there potential impact from runoff? No.

RECREATIONAL

	on site	off site	location & description
trail development	x	X	ATV tracks

ON-SITE MISCELLANEOUS

location
dumping farm implement near site center

HYDROLOGY:

INPUTS

ground water

Flow is to the east and southeast toward the Vermilion River.

surface water

Inputs include seeps along the valley wall on-site and off-site to the west, as well as, Vermilion River flooding.

OUTPUTS

ground water

Discharge occurs to the Vermilion River and a small creek to south. Numerous seeps occur on site.

surface water

Discharge occurs through the small drainageway on the south side of the site and possibly through small channels downgradient of seep areas.

ALTERATIONS

Tiling in this area is possible and would increase drainage and lower local water levels.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Birkbeck-Wind-Russell and
Lawson-Beaucoup-Darwin-Hayward-Belkamp complexes are present (i.e., floodplain soils).

QUATERNARY DEPOSITS

Cahokia Alluvium/Henry Formation occur on-site. To the west, the Wedron Formation and Glasford Diamicton are present.

BEDROCK

upper lithology: shale

depth: 40+ feet

GEOMORPHOLOGY

The site is on a terrace of the Vermilion River with valley walls directly to the west.

TOPOGRAPHY

flat terrace with steep slopes on the west side going into uplands; Total relief on-site is about 20 feet.

Potential for Contamination:

of ground water

from grazing animals/pastureland

of surface water

from grazing animals/pastureland

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

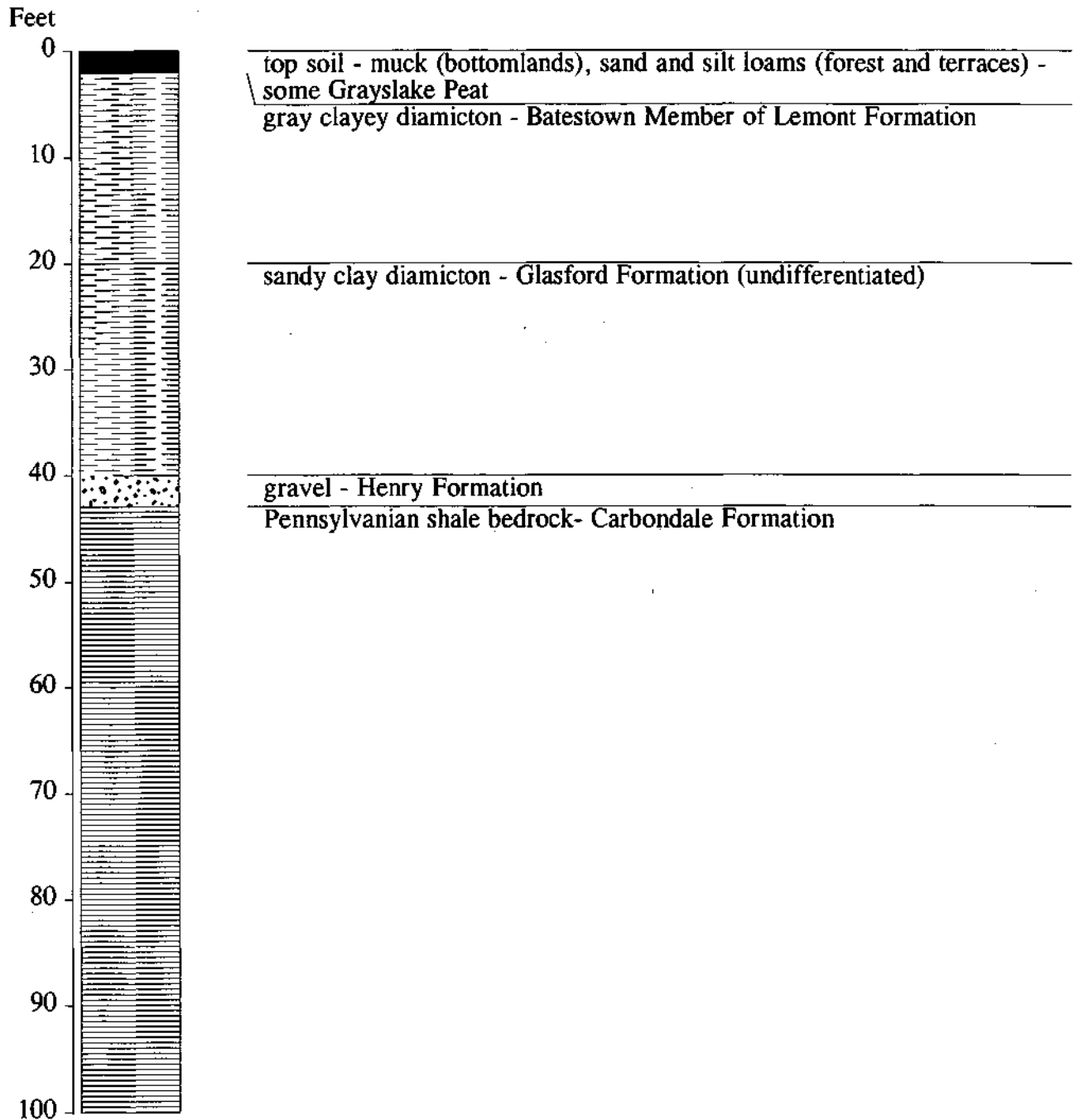
There is grazing to the west (i.e., upgradient) of the site with ground-water discharge directly upgradient and on the site. Agricultural land is directly north of the site and possibly upgradient. Other agricultural lands are to the west. Site materials are vulnerable because they are mainly sand and gravel.

from surface water is low.

Surface-water movement from a grazing area to the east would discharge into a creek which runs on south site border. The site would not be directly impacted by surface-water quality problems of this nature.

Forest Glen Seep Nature Preserve
Vermilion County - 18N 11W Section 13
540

Generalized Stratigraphic Column based on local well logs



Site #: 30 NPC #: 209 Site: Fox River Fen
 County: Kane Location: 35 42N 8E
 Acres: 11.8 7.5 Map(s): Elgin
 Visit date: 06/21/96 Field crew: RAL HAW
 Photos taken? No

SAMPLE INFORMATION

Source: wetland

Sample 1 was taken from shallow water at base of
 seeping area west of bike path which in on an old
 railroad right of way.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	06/21/96	10:45 A	7.3	20.5	870	59

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
other		X	'small marina' - located on the northwest side on the preserve

NO AGRICULTURAL LAND USES NOTED

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (inferred septic system)		X	primary land use surrounding nature preserve

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	at marina and residences (north and west of preserve)
paved road		X	Two-lane highway (called Duncan Avenue in Elgin) to east is upgradient of preserve; paved road at marina entrance
railway	X		Old railroad R.O.W. is now a bike path.

Is there potential impact from runoff? Yes.
Runoff potential is from two lane highway to the east (sketch on file).

RECREATIONAL

	on site	off site	location & description
other		X	'bike path' - on old railroad R.O.W.
other		X	'hunting preserve' - to south and east of preserve

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Primary ground-water input is expected to be from uplands east of preserve. Local gradients may be from northeast to southwest at the northeast corner of preserve.

surface water

No direct surface-water inputs were seen, however, culverts are probably present along the old railroad line. This would allow runoff from the two-lane road to reach the preserve. Because of Fox River Fen's proximity to the Fox River, inflow from the river during periods of flooding is possible. Although, no evidence of major flooding was seen near the east side of the preserve.

OUTPUTS

ground water

Regional discharge is westward to the Fox River.

surface water

No surface water outputs were seen, but small streams probably lead from seeps on the east side to the west side of the preserve and into the Fox River.

ALTERATIONS

road and railroad construction; Both the road and railroad were probably constructed on top of peaty materials to the east of the preserve. Organic rich materials and plant species similar to those seen in the preserve were noted east of the bike path. This construction has probably concentrated flow to the present seep areas.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Houghton Muck (103), Otter silt loam (76) and Dresden Silt loam (325) are the local soil types.

QUATERNARY DEPOSITS

Surficial sand and gravel deposits shown on drillers logs are about 40 feet thick to the east and northeast of the preserve. Grayslake Peat/Cahokia Alluvium and/or Henry Formation/Yorkville Member

BEDROCK

upper lithology: dolomite
supplemental description:

Bedrock depth in floodplain is noted below.

depth: 47+ feet

GEOMORPHOLOGY

Fox River Fen occurs in the floodplain of the Fox River. Uplands to east are about 120 feet above the river elevation. Relief on site is not significant, however there is a gentle slope to the west towards the Fox River.

TOPOGRAPHY

Flat; the site is on the Fox River floodplain and has less than 20 feet of relief.

Potential for Contamination:

of ground water is moderate to high.

of surface water is high.

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

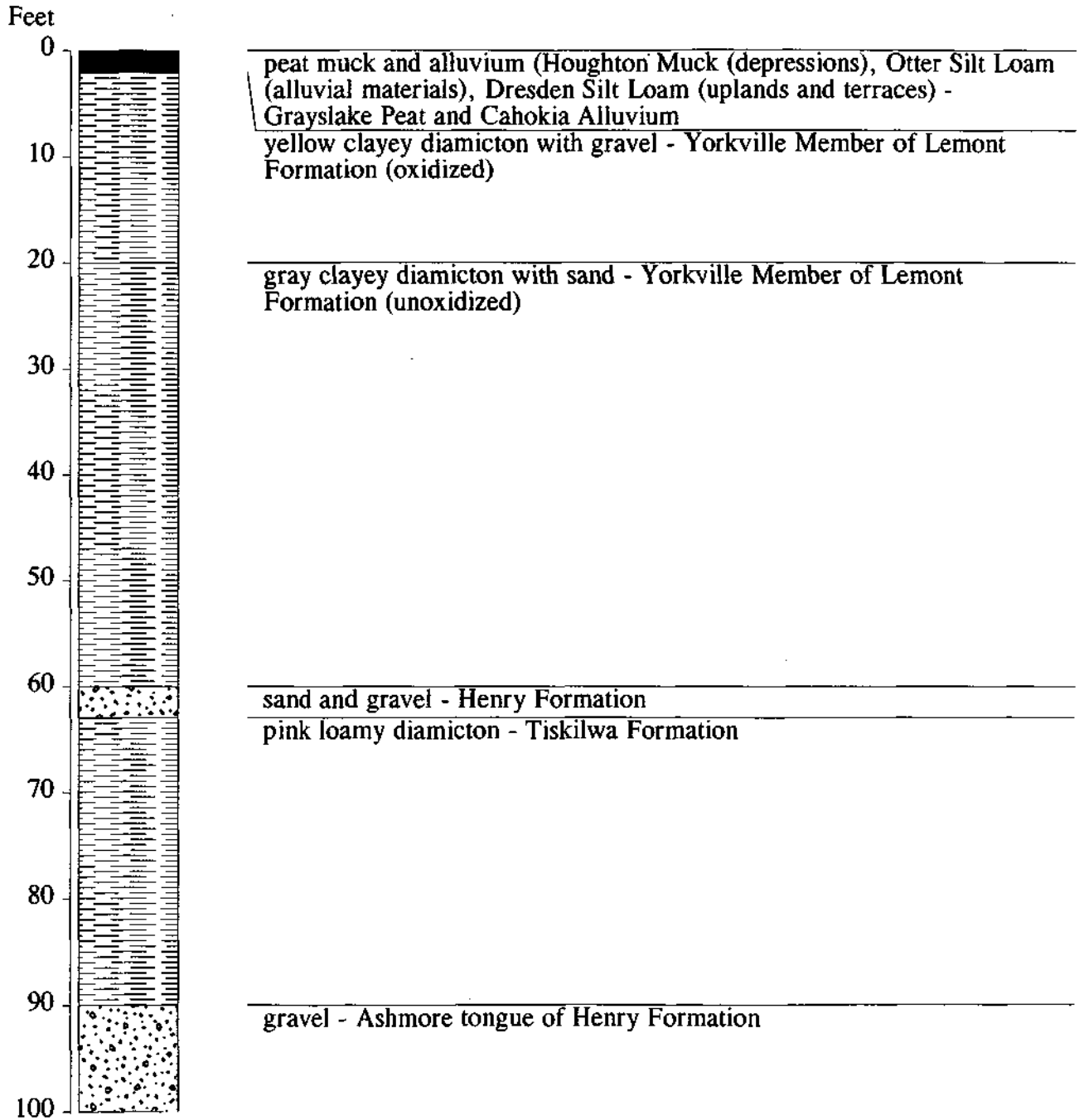
Infiltration of runoff is the primary concern. Since geology is sensitive, potential for rapid chemical transport is present.

from surface water is high.

A road to the east of the site is the primary concern, especially if culverts allow runoff to flow from the road into the preserve.

Fox River Fen Nature Preserve
Kane County - 42N 8E Section 35
720

Generalized Stratigraphic Column based on logs in Section 35



Site #: 60 NPC #: 24 Site: Franklin Creek
 County: Lee Location: 33 22N 10E; 34 22N 10E
 Acres: 96.0 7.5 Map(s): Franklin Grove
 Visit date: 04/10/96 Field crew: RAL SCM
 Photos taken? Yes Number: 4
 Photo description: views of Franklin Creek (noted on topo)

NO SAMPLES TAKEN

PAST ON-SITE LAND USE:

The area marked "Acquisition for Nature Preserve" in Figure 1 of the dedication proposal (see Szafoni 10 February, 1987) includes a house and a barn, suggesting past residential and livestock husbandry uses, possibly including grazing.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
domestic wells		X	both south and north of the preserve (in uplands)

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
pipelines		X	A northeast-southwest trending gas pipeline passes northwest of the preserve

AGRICULTURAL

	on site	off site	location & description
row crops		X	surrounding farms in uplands

pasture		x	surrounding farms in uplands
tree farms		X	north of the nature preserve (in uplands)
storage tanks		X	at farmsteads? (in uplands)
livestock		X	surrounding farms in uplands
RURAL RESIDENTIAL			
	on site	off site	location & description
domestic wells (infers septic system)		X	probably septic tanks at residences north and south of nature preserve (in uplands)
TRANSPORTATIONAL			
	on site	off site	location & description
gravel road	X		Twist Road and Old Mill Road; abandoned driveway access to houses and barn within the preserve on the north side of creek
Is there potential impact from runoff? Yes. minor runoff from gravel roads			
RECREATIONAL			
	on site	off site	location & description
parking		X	
trail development	x		

ON-SITE MISCELLANEOUS

location
dumping old farm equipment on the floodplain of
Franklin Creek
flood debris evidence of flooding in creek valley

HYDROLOGY:

INPUTS

ground water

Minor seepage from the cliff face is expected. No
seeps or springs were observed within preserve
boundary during field visit other than the main spring
which occurs next to Franklin Creek. Note: This visit
occurred during a dry period.

surface water

Franklin Creek and intermittent tributaries are
inputs.

OUTPUTS

ground water

None observed other than the main spring as noted
above.

surface water

Franklin Creek

ALTERATIONS

Pond and millrace construction is occurring downstream
of the preserve. Minimal impact is expected because of
the downstream location.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Elva, Fayette, Whalan, Martinsville, and Sogn soils are
present.

QUATERNARY DEPOSITS

Peoria Silt/Esmond Diamicton

BEDROCK

upper lithology: limestone, dolomite, sandstone
supplemental description:

St. Peter Sandstone is at the bedrock surface in the uplands. Shakopee Dolomite and underlying New Richmond Sandstone are exposed in the creek valley.

depth: 0 - 70 feet

GEOMORPHOLOGY

Franklin Creek has downcut through thin glacial drift and bedrock (sandstone/dolomite). At places, it has formed a steep sided valley with bluffs. A narrow floodplain is present in some places.

TOPOGRAPHY

greater than 60 feet of relief on-site

Potential for Contamination:

of ground water is moderate.

of surface water is low to moderate.

Initial Assessment of Site Vulnerability:

from ground water is moderate.

from surface water is low to moderate.

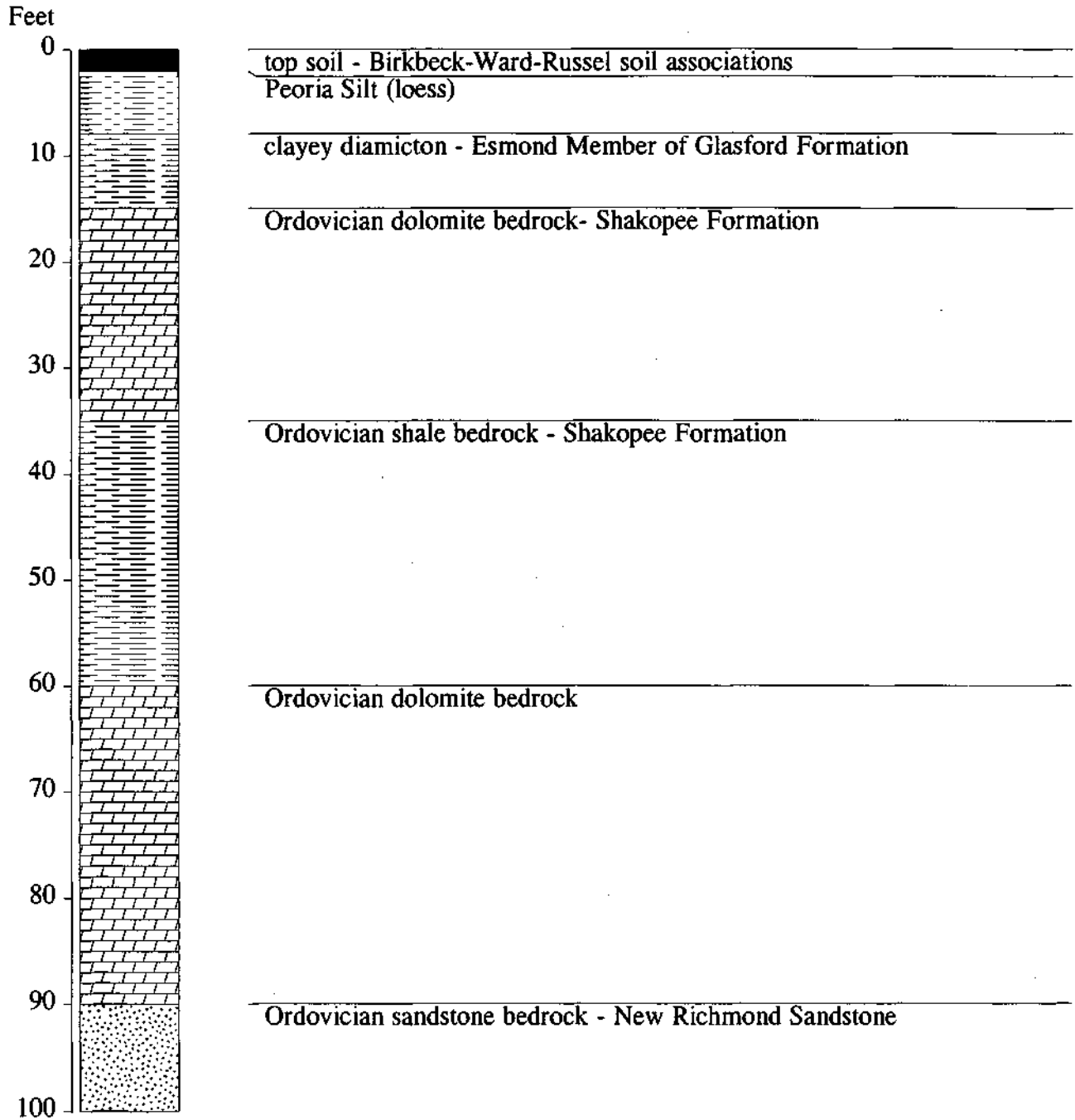
Additional Comments

Initial assessment of vulnerability is based on the potential for contamination of surface and ground water on the site. Note: no seeps were observed. Without a distinct "wetland" feature, it is difficult to classify the vulnerability.

Franklin Creek Nature Preserve
Lee County - 22N 10E Sections 33,34

700

Stratigraphic Column based on log in Section 33: NE NW SE



Site #: 12 NPC #: 88 Site: Gavin Bog and Prairie
 County: Lake Location: 12 45N 9E, 13 45N 9E
 Acres: 136.5 7.5 Map(s): Fox Lake, Antioch
 Visit date: 05/09/96 Field crew: RAL SCM
 Photos taken? No

SAMPLE INFORMATION

Source: wetland
 from marsh edge in northwest part of preserve;
 noted on topo

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/09/96	05:30 P	7.2	17.2	350	60

PAST ON-SITE LAND USE:

grazing, some timbering, drainage (possible tiles,
 ditches, culverts, etc.) and snowmobiling

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	residences directly-adjacent to the preserve on the north and west sides; additional housing to the south, southeast and northwest farther from preserve
domestic	wells	X	

above ground disposal/dumping	x		A great deal of debris has been dumped at the end of a road in the subdivision to the north of the preserve. An old motor, paint can, utility sink, tires, bicycle parts, electrical conduit, and several plastic containers (like antifreeze containers) were seen. Debris is mostly overgrown; indicating that it is not very recent.
underground disposal		X	
INDUSTRIAL/COMMERCIAL/MUNICIPAL			
	on site	off site	location & description
sewers		X	in subdivisions adjacent to preserve
other		X	'stormwater discharge pipe' - nearby resident and G. Bonfert's handwritten notes about threats (copy in file) indicate a pipe discharging towards the preserve from the subdivision to the west; possibly a stormwater pipe. Could this be a pipe from a sewage treatment facility? No treatment plants were seen on site visit.

AGRICULTURAL

	on site	off site	location & description
drainage wells/tile outlets/ditches			drainage ditch in southeast part of nature preserve noted in dedication proposal

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	in subdivisions to north and west primarily as well as Rollins Road to south; Numerous other roads are present in vicinity but not adjacent to preserve.

Is there potential impact from runoff? Yes.
primarily from subdivision in the north

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

	location
dumping	see 'suburban residential - above ground disposal/dumping'

HYDROLOGY:

INPUTS

ground water

Ground water is at the surface in the bog area of the nature preserve. Elsewhere, ground water is probably fairly shallow (within about 10 feet of the surface) most or all of the year. The exception is the southwest corner of the preserve, where ground water may be about 40 feet deep below the hill in this part of the preserve. Interpreting flow is somewhat problematic. Shallow ground water probably enters the preserve from the west, but flow lines probably diverge near the center of the preserve, with shallow ground water in the north part of the preserve discharging into the Gavin Bog and the stream draining it. Ground water in the south part of the preserve probably crosses the nature preserve and discharges into Eagle Creek, a tributary of Long Lake. Minor discharge occurs in small kettle lakes and wetlands in the central part of the preserve. Recharge occurs largely in the upland area west of the nature preserve.

surface water

Surface water may enter the preserve as runoff from upland areas north, west and south. Paving, associated with housing development in these areas, has undoubtedly increased runoff into the nature preserve. A culvert draining a new housing development west of the preserve may contribute runoff (this was reported to us by a kid at the preserve and is indicated in a list of threats written by the INPC - see file). The quad map shows surface water entering the northeast corner of the preserve as a stream draining a wetland area. This stream joins the stream draining Gavin Bog and the resulting stream exits the preserve to the north.

OUTPUTS

ground water

Ground water discharges: 1) through seepage and evapotranspiration at Gavin Bog, 2) into some small kettle lakes and wetlands in the center of the preserve, and 3) along the channel exiting the preserve to the northeast and in areas of shallow water marginal to these features. Ground water flows through the south part of the nature preserve from west to east and discharges into Eagle Creek.

surface water

A stream (which drains Gavin Bog and the wetland to the northeast of the preserve) exits the preserve to the north and empties into Stanton Bay (on Fox Lake).

ALTERATIONS

Development of areas north, south and west of the nature preserve has involved extensive paving and grading to facilitate drainage into the preserve. There are anecdotal reports of a culvert emptying into the preserve (see above). These changes would result in greater contribution of surface water to the preserve, more rapid contribution of surface water (i.e., much water during and shortly after rainfall events, little during intervening periods) than under undisturbed conditions, and a localization of surface water input. The dedication proposal reports a drainage ditch in the southeast part of the preserve and the plugging of the Gavin Bog outlet stream. The plugging caused water levels to increase in the bog. The proposal also indicates that several dug ponds are present in the northern extremes of the marsh surrounding the bog.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Houghton Muck covers bog area. Peotone silty clay loam fingers in and out of the eastern and southeastern parts of the preserve (see map). Other types: Nappanee silt loam, Ashkum silty clay loam, Morley silt loam, Zurich silt loam, Wauconda silt loam, Pella silty clay loam, Del Ray silt loam

QUATERNARY DEPOSITS

Grayslake Peat/ Equality/ Henry

BEDROCK

depth: 200+ feet

GEOMORPHOLOGY

kettle depression

TOPOGRAPHY

Moraine slopes exist east and west of site.

Potential for Contamination:

of ground water is moderate.

of surface water is moderate to high.

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

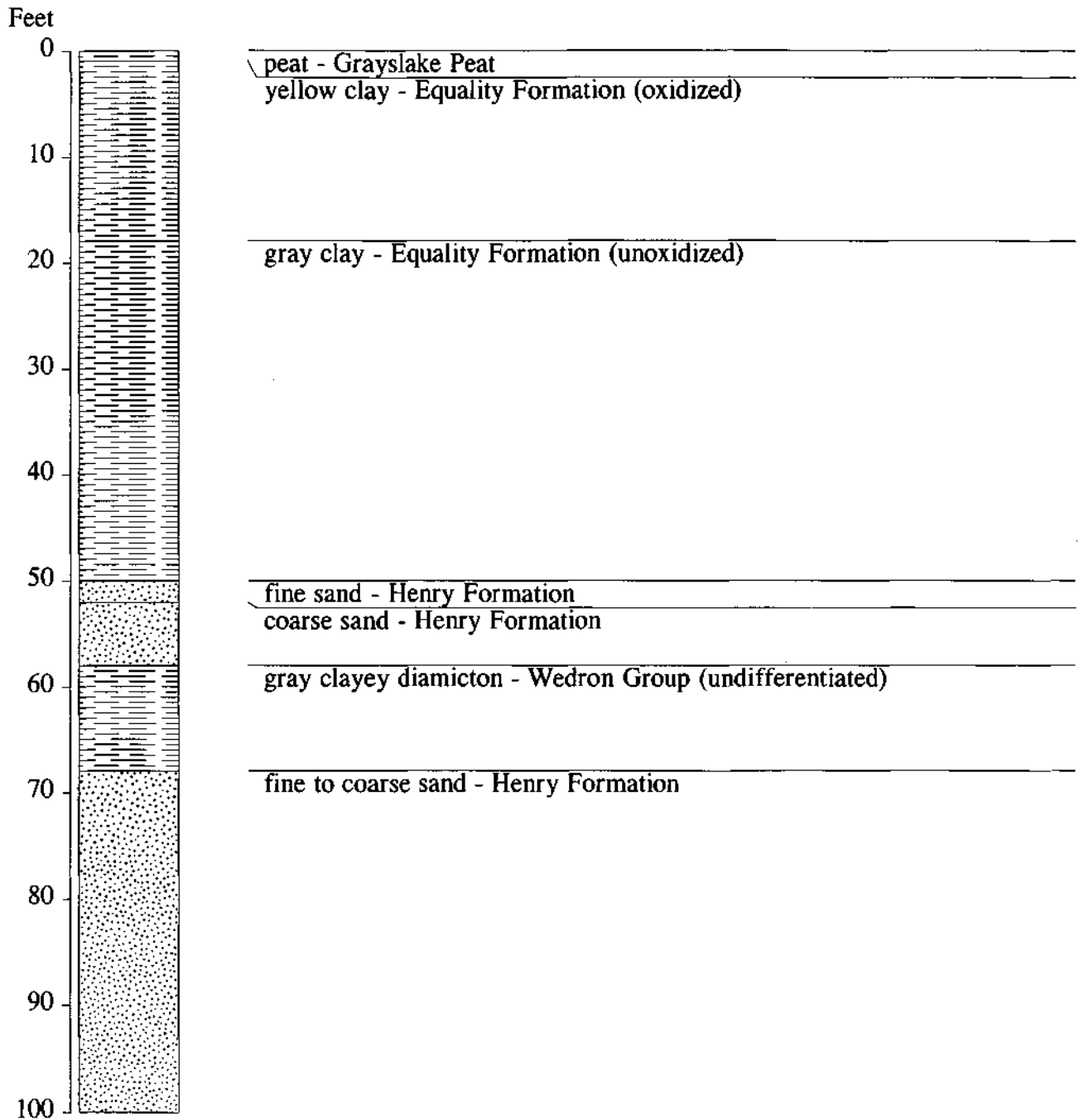
from surface water is high.

Dumping has occurred along north margin of the bog.

Runoff from adjacent developed areas has potential to impact the preserve.

Gavin Bog and Prairie Nature Preserve
Lake County - 45N 9E Sections 12, 13
750

Stratigraphic Column based on log in Section 12: NE SW NE



Site #: 40 NPC #: 77 Site: Gensburg-Markham Prairie
 County: Cook Location: 13 36N 13E
 Acres: 95.0 7.5 Map(s): Harvey
 Visit date: 07/09/96 Field crew: RCB MVM
 Photos taken? Yes Number: 5
 Photo description: 5 shot panorama

NO SAMPLES TAKEN

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	south and north of site

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
sewers		X	along Route 6 about 1/4 mile south of site

AGRICULTURAL

	on site	off site	location & description
drainage wells/tile outlets/ditches		X	multiple ditches in a herring-bone pattern from north to south with east-west feeders

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	I-294 along east border, I-57 about 1/4 mile northwest and Route 6 about 1/4 mile south; residential roads southwest, west and northwest of site

Is there potential impact from runoff? Yes.
from I-294 and residential roads

RECREATIONAL

	on site	off site	location & description
other		X	'forest preserve' - along portion of south border

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is expected to be from southwest to northeast

surface water

Inputs are expected from overland flow and via drainage ditches which are in an integrated herring-bone pattern and drain the site to the south.

OUTPUTS

ground water

Discharge probably occurs to the northeast to low lying areas within the preserve due to the regional and local gradients.

surface water

Discharge occurs via drainage ditches which trend north-south. The extensive network of ditches probably feeds the Calumet Union Drainage Canal to the south and east.

GEOLOGY:

Primary geologic origin(s): lacustrine, eolian

SOIL ASSOCIATION/SERIES

Selma (an alluvial soil), Watseka and Hoopston soils
(all sandy)

QUATERNARY DEPOSITS

Parkland Sand/Henry Formation (thin)/ Equality Formation
silts and clays (to about 30 feet)/carbonate bedrock; In
general, sands occur on ridges and silts and clays occur
in swales.

BEDROCK

upper lithology: limestone, dolomite

depth: 40 - 100+ feet

GEOMORPHOLOGY

low beach ridges with swales; A large ridge trending
northwest - southeast is south of the site.

TOPOGRAPHY

relatively flat; less than 20 feet of total relief on
site

Potential for Contamination:

of ground water

from residential areas northwest and south of site; A
water pipe runs northwest-southeast through the site,

of surface water

I-294 and residential street runoff is expected to be
minimal.

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

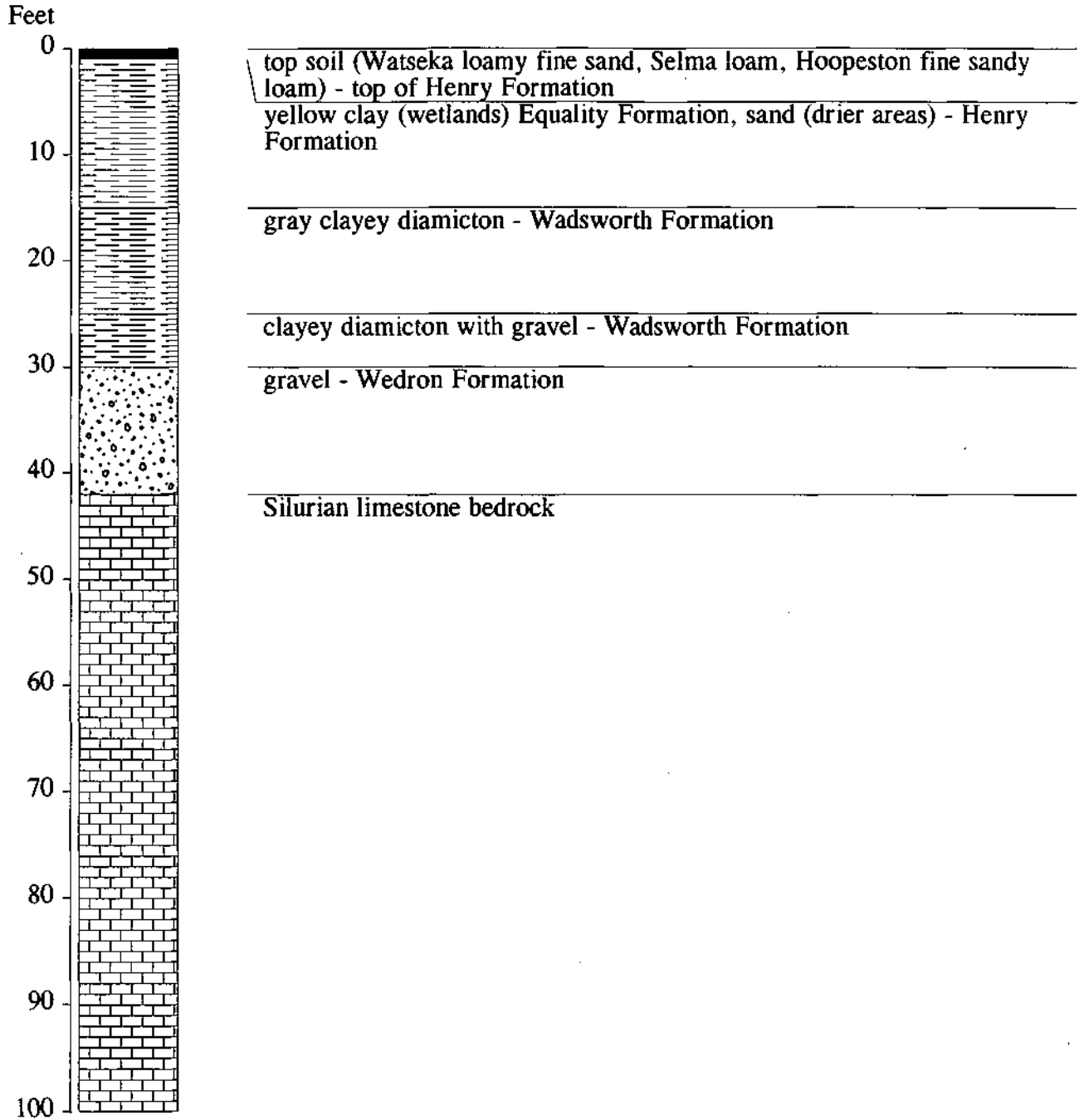
No industry exists around the site,

from surface water is low to moderate.

Main problem would be from I-294 and residential
roads. If the area south of the site is developed,
vulnerability would increase considerably.

Gensburg - Markham Prairie Nature Preserve
Cook County - 36N 13E Section 13
610

Stratigraphic Column based on logs in Section 13 supplemented by information from
Master Plan



Site #: 59 NPC #: 43 Site: George B. Fell
 County: Ogle Location: 17 23N 10E; 18 23N 10E; 19 23N 10E
 7 23N 10E; 24 23N 9E
 Acres: 709.0 7.5 Map(s): Grand Detour, Daysville
 Visit date: 04/10/96 Field crew: RAL SCM
 Photos taken? Yes Number: 4
 Photo description: UNIMIN mining, valley and culvert next to
 Route 2 which are in the preserve

SAMPLE INFORMATION

Source: stream

in southeast part of Fearer Tract from the
 northwest-southeast trending stream (noted on
 Grand Detour topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/10/96		7.6	11.5	770	105

PAST ON-SITE LAND USE:

Fearer Tract: recreational activities including
 horseback riding; See the dedication proposal for
 additional information. History on parcel adjacent to
 Illinois Route 2 was not on file.

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
surface impoundments		X	possibly on UNIMIN property
mining		X	UNIMIN property surrounds the Fearer tract on the east and south. There is a temporary scenic easement between the Fearer tract and other DOC property.

stockpiles				
building				
materials			X	sand piles at UNIMIN
production wells			X	possibly at UNIMIN
other			X	'monitoring wells and test borings' - at UNIMIN
other			X	'storage tanks' - at UNIMIN
AGRICULTURAL				
	on	off		
	site	site		location & description
row crops			X	along uplands adjacent to Devils Backbone Road
pasture			X	at White Pines Stables and possibly in uplands
storage tanks			X	at stables (?)
livestock			X	horses at stables and cattle on upland farms (?); See the site analysis from the Castle Rock State Park Master Management Plan.
underground				
			X	Septics are likely at residences.
RURAL RESIDENTIAL				
	on	off		
	site	site		location & description
domestic wells (infers septic system)			X	at farms adjacent to the Fearer Tract

TRANSPORTATIONAL

	on site	off site	location & description
gravel road	x	X	the southwest and southeast
paved road		X	Illinois Route 2
railway		X	near northwest portion of Fearer Tract

Is there potential impact from runoff? Yes.
 from both gravel and paved roads

RECREATIONAL

	on site	off site	location & description
trail development	X	X	Horse trails are both on and off-site and extend into the Fearer Tract on the west edge.

ON-SITE MISCELLANEOUS

location
 dumping on Wilderness Road

HYDROLOGY:

INPUTS

ground water

Local flow from St. Peter is presumably perpendicular to stream valleys.

surface water

Deeply incised stream valleys are the primary inputs. Valleys generally trend northwest-southeast in southern tract and northeast-southwest in Fearer Tract.

OUTPUTS

ground water

Seeps and seepage occur along stream channels with the regional gradient influenced by the Rock River.

surface water

Streams exit to the east and flow to the Rock River and it's tributaries.

ALTERATIONS

See DOC site analysis (circa ??) from Castle Rock State Park Management Plan.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

in Fearer Tract: Elva, Boone, Dubuque, Flagg, Comfrey, Woodbine, and Sogn; in southern tract: Fayette, Boone, Elva, Miami, Pecatonica, Flagg, Birkbeck, Whalan and Martinsville

QUATERNARY DEPOSITS

Bedrock is at the surface with some Peoria Silt overlying it. Soils suggest some diamicton and Henry Formation are present at the surface.

BEDROCK

upper lithology: sandstone, shale
supplemental description:

A very thin mantle of glacial materials overlie thin Glenwood Shale with St. Peter Sandstone below. Shakopee Dolomite may be present.

depth: 0 - 30 feet

GEOMORPHOLOGY

The area is dominated by highly dissected bedrock landforms.

TOPOGRAPHY

Local relief is over 61 meters (200+ feet) in the south tract and over 40 meters (130+ feet) in north tract.

Potential for Contamination:

of ground water is moderate to high.

A more detailed study of specific features in the preserve and their relation to potential contamination sources is needed.

of surface water is high.

Stables and UNIMIN are located upgradient of the surface water that flows through the preserve tracts.

Initial Assessment of Site Vulnerability:
from ground water is high.

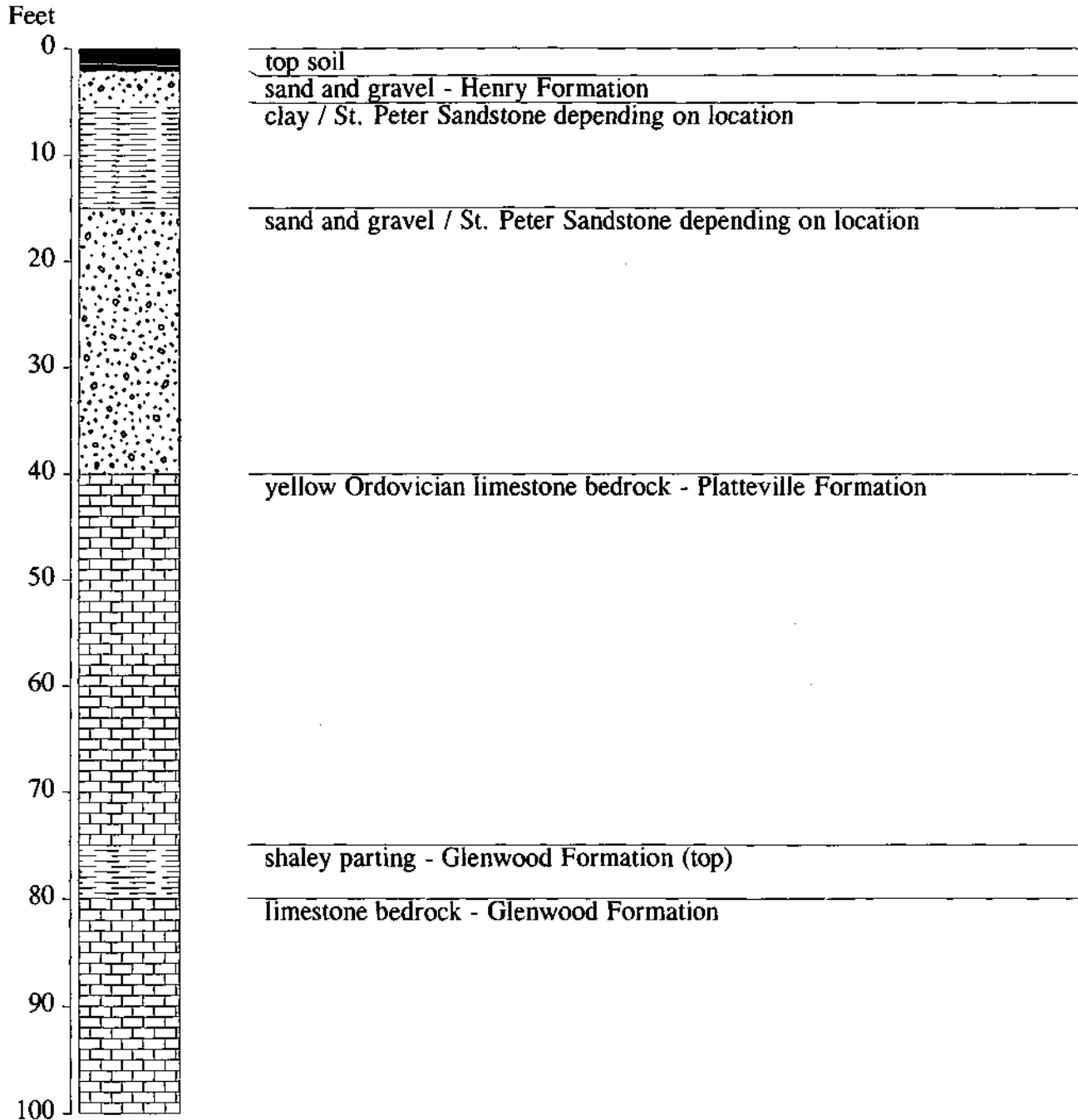
from surface water is high.

Additional Comments

A more detailed assessment of ground-water flow in this area is needed to assess the impact of mining on the quantity/quality of ground water and surface water. The St. Peter Sandstone is noted as dipping northwest which may affect the potential for ground-water contamination, but it is unclear to what extent. Local mining represents a significant change in the hydrology and effects from mining should undergo more detailed study.

George B. Fell Nature Preserve
Ogle County - 23N 10E Sections 17, 18, 19, 20
840

Stratigraphic Column based on logs in Sections 17, 18 supplemented by information
from the dedication proposal



Site #: 15 NPC #: 214 Site: Glacial Park
 County: McHenry Location: 5 45N 8E
 Acres: 330.0 7.5 Map(s): Richmond
 Visit date: 05/08/96 Field crew: RAL SCM
 Photos taken? No

SAMPLE INFORMATION

Source: wetland
 from marsh edge at observation deck; in shallow
 water; noted on topo

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/08/96	02:05 P	6.8	10.0	220	29

PAST ON-SITE LAND USE:

Prior uses of land have been entirely agricultural (as noted in the dedication proposal). Upland savannas were used for grazing, selected timbering, and some upland farming.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	west of preserve between Wonder Lake and the preserve
domestic wells underground disposal		X	see 'lawns' above
		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	sand and gravel mining at Glacier Lake Pit in northwest

AGRICULTURAL

	on site	off site	location & description
row crops		X	to northeast, east, southeast
storage tanks		X	at farms

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (infers septic system)		X	at farms to east

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	access road to M CCD office
paved road		X	see sketch on file
other		X	Dept. of Transportation R.O.W. entering from northwest extending into, but not through the preserve

Is there potential impact from runoff? No.

RECREATIONAL

	on site	off site	location & description
other		X	hunting club to north
other		X	'Hidden Valley Stables' - northeast of preserve on Harts Road

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Ground-water flow into the preserve is generally from south. Depth to water varies considerably because of topography (possibly 0-60 ft.). An area of ground-water input is expected in northeast.

surface water

The only distinct input is in the southeast where an intermittent stream originates from an area denoted as marsh on the topo.

OUTPUTS

ground water

On-site discharge occurs into wetland features and off-site discharge occurs from nature preserve to north and northwest.

surface water

The intermittent stream which enters in the southeast exits on the east side of the preserve.

ALTERATIONS

Minor drainage has occurred in northern part and southeast corner. The impact of such alterations would be a decrease in water levels locally.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Houghton Muck and Rodman/Fox soils on outwash deposits;
Kidder soil on moraine

QUATERNARY DEPOSITS

Haeger Member/Henry Formation/Tiskilwa Formation

BEDROCK

upper lithology: dolomite, shale

depth: 180 - 210 feet

GEOMORPHOLOGY

kame/kettle complex

TOPOGRAPHY

Steep sided kames adjacent to flat lowlands; Total relief on-site is about 100 feet.

Potential for Contamination:

of ground water is low to moderate.

of surface water is low to moderate.

greatest potential in northeast part of preserve in vicinity of stables

Initial Assessment of Site Vulnerability:

from ground water is moderate.

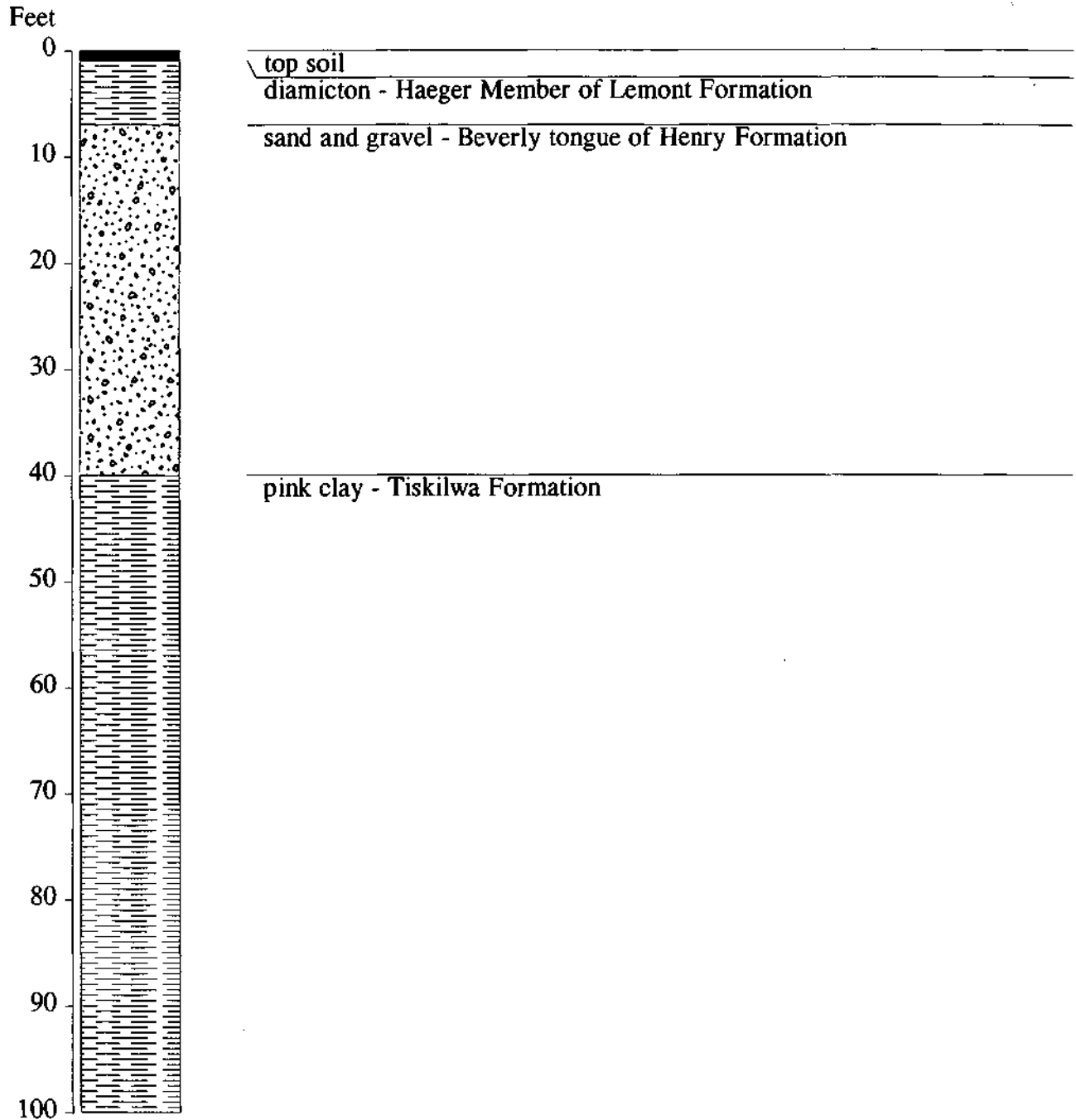
from surface water is low to moderate.

Additional Comments

Marshes in the north part of the preserve were the focus of the assessment.

Glacial Park Nature Preserve
McHenry Co. - 45N 8E Sec. 5; 46N 8E Sec. 32
800

Stratigraphic Column based on log in Section 32: NE SW NE



Site #: 20 NPC #: 204 Site: Gladstone Fen
 County: McHenry Location: 18 44N 8E, (NE NW NW)
 Acres: 6.4 7.5 Map(s): McHenry
 Visit date: 06/20/96 Field crew: RAL HAW
 Photos taken? Yes Number: 5
 Photo description: R6 P21: looking west into old creamery
 R6 P22: looking down at spring box
 discharge
 R6 P23: looking southward toward spring
 with spring box
 R6 P24-25: looking northeast and north,
 respectively over fen area from on top of
 spring box

SAMPLE INFORMATION

Source: stream

Sample 1 was taken about 40 feet from 'old
 creamery' spring origin (i.e., northwest corner
 of old foundation) and is noted on the topo.

other

'spring' - from spring with spring "box". Sample
 2 was taken from the discharge pipe of the spring
 box (noted on topo).

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	06/20/96	10:00 A	7.1	11.5	850	112
Sample 2	06/20/96	10:15 A	7.2	9.0	840	65

PAST ON-SITE LAND USE:

grazing; old creamery construction and operation (from
 10/90 dedication proposal); farming?

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
other		X	'planned subdivision' - Stickney Subdivision is under construction just northwest of preserve. While the local ground-water gradient appears to be to the northeast in the vicinity of the subdivision, a slightly more easterly gradient could direct infiltration from Stickney homes toward Gladstone Fen.

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	multiple small gravel mines to west (greater than 1/2 mile away)

AGRICULTURAL

	on site	off site	location & description
row crops		X	north and east of nature preserve
livestock		X	ducks (and other animals?) directly west of springs
surface impoundments/feed lots		X	duck pen to west

drainage wells/tile
outlets/ditches

X not seen but
possible to north of
nature preserve

RURAL RESIDENTIAL

on off
site site

location & description

domestic wells
(inferred septic
system)

X

at Gladstone
residence and other
residences along
Cherry Valley and
Crystal Springs
Road; Homes on these
roads are widely
spaced.

TRANSPORTATIONAL

on off
site site

location & description

paved road

X

Cherry Valley and
Crystal Springs
Roads

Is there potential impact from runoff? Yes.
Primary area of potential runoff is along Cherry
Valley Road as indicated by the sketch on file.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Local and regional flow is expected to be from west to
east and from southwest to northeast.

surface water

No direct surface-water inputs to preserve were seen.
A small stream may skirt the northeast part of nature
preserve.

OUTPUTS

ground water

Major outputs are: discharge through seeps and springs and flow off-site due to local gradients.

surface water

Streams fed by springs exit the site. Old Creamery Spring discharges to a pond just south of the nature preserve. The spring with the spring box discharges to north and northeast towards fen area and presumably off-site to the northeast.

ALTERATIONS

see 'past on-site land use'

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Harpster-Brenton-Casco association; See dedication proposal for additional information.

QUATERNARY DEPOSITS

Gladstone Fen is situated along the eastern slope of the West Chicago Terminal Ridge. Quaternary deposits present locally are the Tiskilwa and Haeger Members. Thin Grayslake Peat/(possibly some Henry Formation)/Yorkville Diamicton.

BEDROCK

upper lithology: limestone

depth: 97-233 feet

GEOMORPHOLOGY

Gladstone Fen is located at the east edge of the West Chicago Terminal Ridge. The West Chicago Moraine is approximately 200 feet high locally.

TOPOGRAPHY

Slope is generally to the east and northeast. The steepest slopes occur to the west of the fen within about 1/2 mile.

Potential for Contamination:

of ground water is moderate to high.

of surface water is low to moderate.

Initial Assessment of Site Vulnerability:

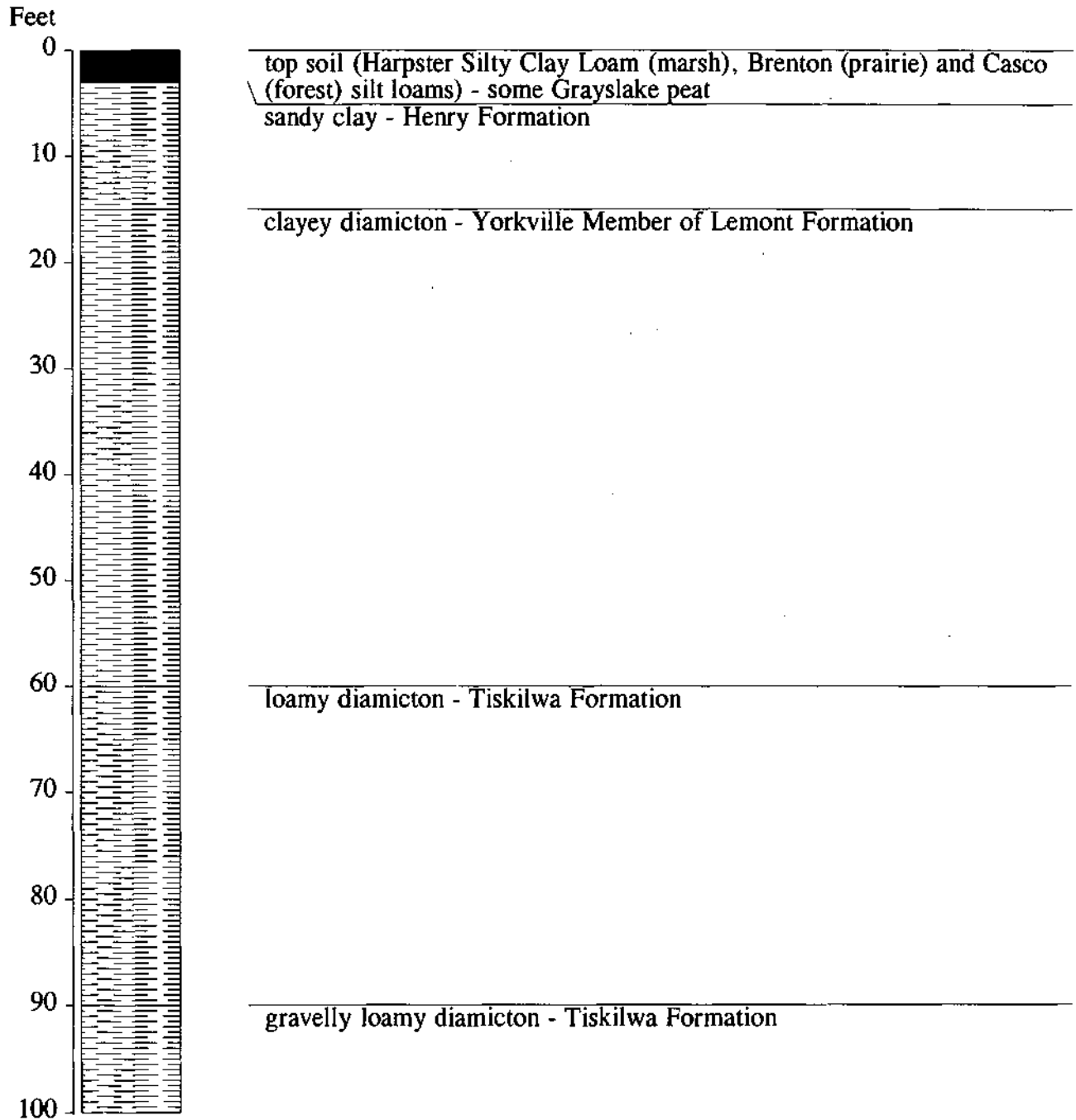
from ground water is moderate to high.

Sensitive on-site and off-site geology was identified
as well as potential contamination sources.

from surface water is low to moderate.

Gladstone Fen Nature Preserve
McHenry County - 44N 8E Section 18
890

Generalized Stratigraphic Column based on logs in Section Section 18



Site #: 50 NPC #: 21 Site: Goose Lake Prairie
 County: Grundy Location: 3 33N 8E; 4 33N 8E; 9 33N 8E
 10 33N 8E; 33 34N 8E; 34 34N 8E

Acres: 1628.1 7.5 Map(s): Coal City, Minooka
 Visit date: 04/19/96 Field crew: RAL DCB
 Photos taken? Yes Number: 3
 Photo description: R4P14: looking north across dry lake bed
 in center of site (noted on topo); R4P15:
 deer on west edge of site; R4P16: looking
 southwest at the location of sample 1
 (noted on topo)

SAMPLE INFORMATION

Source: pond

from pond in NE 1/4 of Section 34 (T34N R8E) in
 the north part of the preserve (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/19/96	11:30 A	9.0	17.2	340	58

PAST ON-SITE LAND USE:

This has historically been an area of farm activity
 (grazing, ditching, tiling, etc.). Mining of refractory
 clays has occurred in the southeast part of the
 preserve. Several attempts of reclamation have been
 made, but water chemistry is still expected to be very
 acidic with high concentrations of heavy metals.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	primarily south of the preserve along Pine Bluff Road
domestic wells underground		X	see 'lawns' above
disposal		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL			
	on site	off site	location & description
landfill	x	X	Sewage treatment sludge dumped into clay mining pits on-site in the southeast
surface impoundments		X	possibly at strip mines to south, southeast and east
mining	X	X	clay(on-site) and coal (?) mining off-site to east, south and southeast of preserve
production wells		X	at power plants (?)
stockpiles coal		X	materials left on-site associated with strip mines (?)
other		X	'monitoring wells and test borings' - assumed to be at power plants
other		X	'spent nuclear fuel processing' - at GE (Morris operation) northeast of nature preserve
other		X	'nuclear power facility' - Com Ed Dresden Plant northeast of nature preserve
other		X	'coal power facility' - Com Ed Collins Plant west of nature preserve

other		X	'Reichhold Liquid Chemical Facility' - north of nature preserve
AGRICULTURAL			
	on site	off site	location & description
row crops		X	to west on DOC property; to north between Reichhold and nature preserve; to southeast
storage tanks		x	to southeast (?)

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road	x	X	Mining roads (on-site in southeast); mining roads off-site to southeast; DOC access roads/ski trails near Welcome Center to west (off-site)
paved road		X	Pine Bluff Road to south; Collins Road to north; Dresden Road to east
railway	X	X	Abandoned north-south line of Elgin, Joliet and Eastern runs through the preserve. Active extensions are to the north and west.

Is there potential impact from runoff? No.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Precipitation is expected to be a major input. Generalizations are difficult due to the topography and location of the preserve which is near the Kankakee, Des Plaines, and Illinois Rivers. Flow directions are expected to be to the west and north. Eastward flow may also occur in the south.

surface water

Surface drainage is on very gently sloping topography. No distinct surface-water inputs were seen. The area has more noticeable drainage from the preserve than towards it. One culvert was seen (near R4P16) under Collins Road.

OUTPUTS

ground water

Discharge of shallow ground water occurs to low lying marsh areas. Surface water at clay pits in the southeast may come partially from ground-water discharge, but low permeability materials probably allow perching to occur.

surface water

South part of the preserve drains to east through strip mine drainageways. The central part of the preserve appears to drain to the west through ditches. Surface-water outputs in north part of the preserve are indistinct and may also drain to the east towards Heidecke Lake and then north towards the Illinois River.

ALTERATIONS

The cooling lake for the Com Ed Collins Station is expected to have increased water levels in the northwest part of the preserve. Other effects such as chemistry and temperature changes are unknown. Many other alterations are expected due to the extensive mining and commercial activity.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Channahon, Rockton, Aquoll, Faxon, Hononegah, Maumee, Milford and Shadeland soils are present (mainly sandy-soils over rock).

QUATERNARY DEPOSITS

Henry Formation/Galena-Plateville Dolomite/Maquoketa Shale

BEDROCK

upper lithology: limestone, dolomite, sandstone, shale, coal
supplemental description:

Sandstone (Pottsville), shale (Maquoketa),
limestone-dolomite (Galena-Platteville), coal (?)

depth: 2 - 10 feet

GEOMORPHOLOGY

Site is in the floodplain of the Illinois, Des Plaines, and Kankakee Rivers.

TOPOGRAPHY

The site is relatively flat with about 30 feet of total relief on-site (over about 1600 acres).

Potential for Contamination:

of ground water

of surface water is very high.

Locally high in the southeast part of the preserve from acid mine drainage where chemistry shows drainage effects.

Initial Assessment of Site Vulnerability:

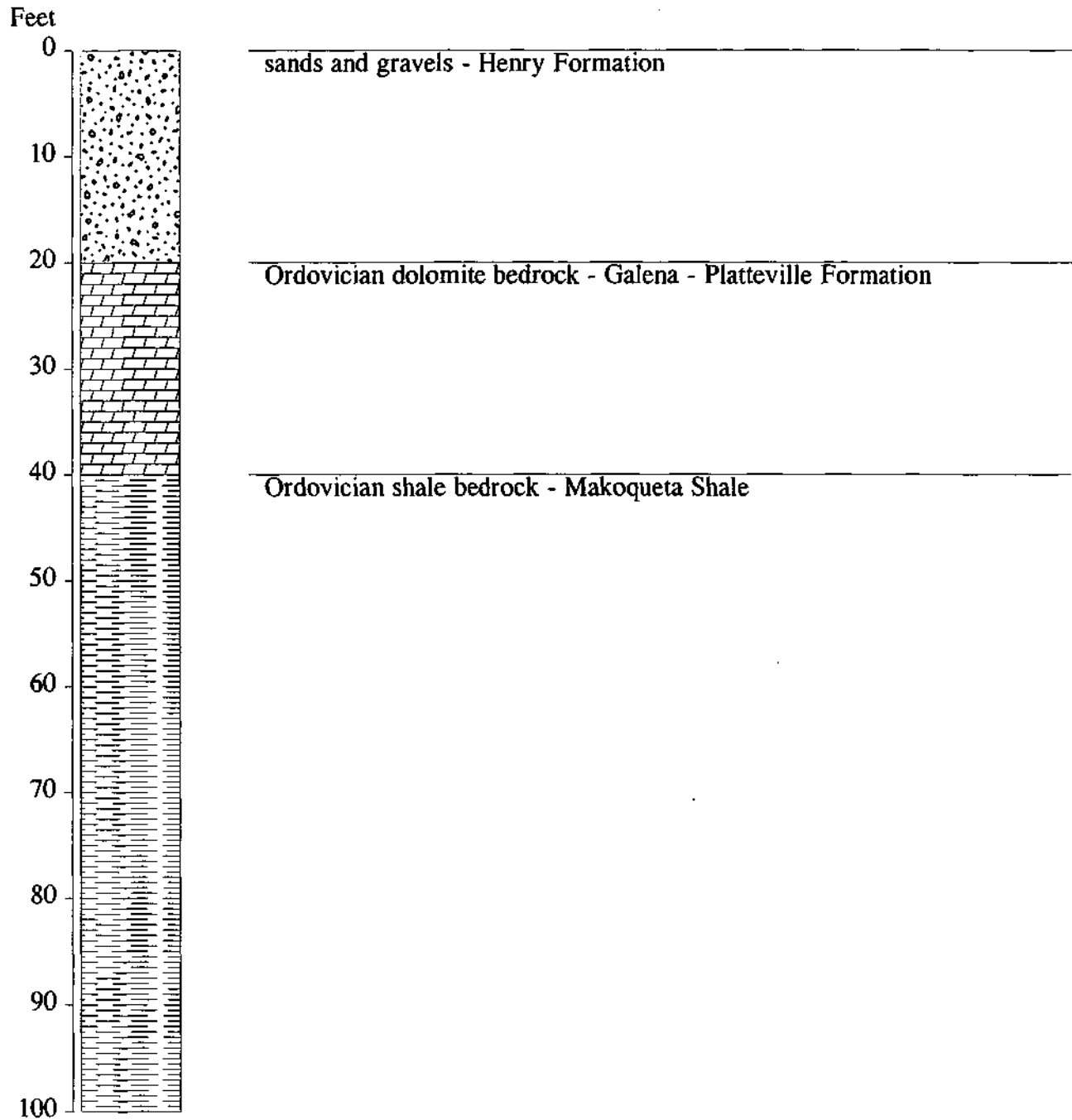
from ground water is high.

Portions of the site are downgradient of mined areas and upper geologic materials (e.g., sand and gravel and dolomite) are sensitive.

from surface water is very high.

Ranking indicates vulnerability in contaminated areas in the southern part of the site. Elsewhere on the site vulnerability is much lower due to local flow directions away from the preserve.

Goose Lake Prairie Nature Preserve
Grundy Co. - 33N 8E Sec. 3,4,9,10; 34N 8E Sec. 33,34
520
Generalized Stratigraphic Column based on local logs



Site #: 57 NPC #: 150 Site: Hanover Bluff
 County: Jo Daviess Location: 20 26N 2E; 21 26N 2E; 28 26N 2E
 29 26N 2E
 Acres: 361.7 7.5 Map(s): Green Island
 Visit date: 04/11/96 Field crew: RAL SCM
 Photos taken? Yes Number: 1
 Photo description: R3P7: at sampling location (noted on
 topo)

SAMPLE INFORMATION

Source: seep

in an otherwise dry stream channel (see R3P7);
 Channel was covered with dead leaves.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/11/96		7.4	9.5	530	175

PAST ON-SITE LAND USE:

pine plantation, grazing

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	to south
other	X		'major powerline' - in northern portion of preserve (see dedication proposal for map); Line cuts across preserve and significant excavation and traffic has produced bare slope faces with high potential for erosion.

AGRICULTURAL

	on site	off site	location & description
row crops		X	west of Whitton Road; small areas also in northeast
pasture		X	small parcels in the northeast
tree farms	x		in northern tip of preserve (see dedication proposal for map)
livestock		X	possibly to the east

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (infers septic system)		X	trailer (to north) and houses (to east and west) at slope bottoms
other		X	'lawns' - at same locations noted in 'domestic wells'

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	South Whitton Road west of preserve; South Hanover Hill Road to north; South Crazy Hollow to east
other	X		'dirt road' - Access road to Interstate Power Co. easement is in north part of preserve.

Is there potential impact from runoff? No.

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

location
dumping old car on-site by easement access road
HYDROLOGY:

INPUTS

ground water

Infiltration of precipitation is the primary input.

surface water

none

OUTPUTS

ground water

Outputs include: seepage at land surface (primarily in channels) and local gradients allowing off-site flow.

surface water

stream flow from seeps

ALTERATIONS

Significant disturbance has occurred along the powerline easement in the northern most valley. There is a great potential for erosion and siltation in this valley where seeps are present.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial

SOIL ASSOCIATION/SERIES

Soils noted from county soils survey are: 779, 785, 53, 274, 403, 565, 417, and 8415. The dedication proposal notes the Chelsea, Seaton, Sogn, Hamburg, Lamont, Derinda, Tell, Fayette, and LaHogue Series are present.

QUATERNARY DEPOSITS

possibly some thin Peoria Silt and/or Henry Formation

BEDROCK

upper lithology: limestone, dolomite, shale

supplemental description:

Silurian dolomite is close to the surface.

depth: 0 - 20 feet

GEOMORPHOLOGY

The site has a bedrock high which forms a prominent bluff edge between the Apple River and Mississippi River Valleys.

TOPOGRAPHY

Over 300 feet of relief is on-site.

Potential for Contamination:

of ground water is low.

of surface water is moderate.

Initial Assessment of Site Vulnerability:

from ground water is low.

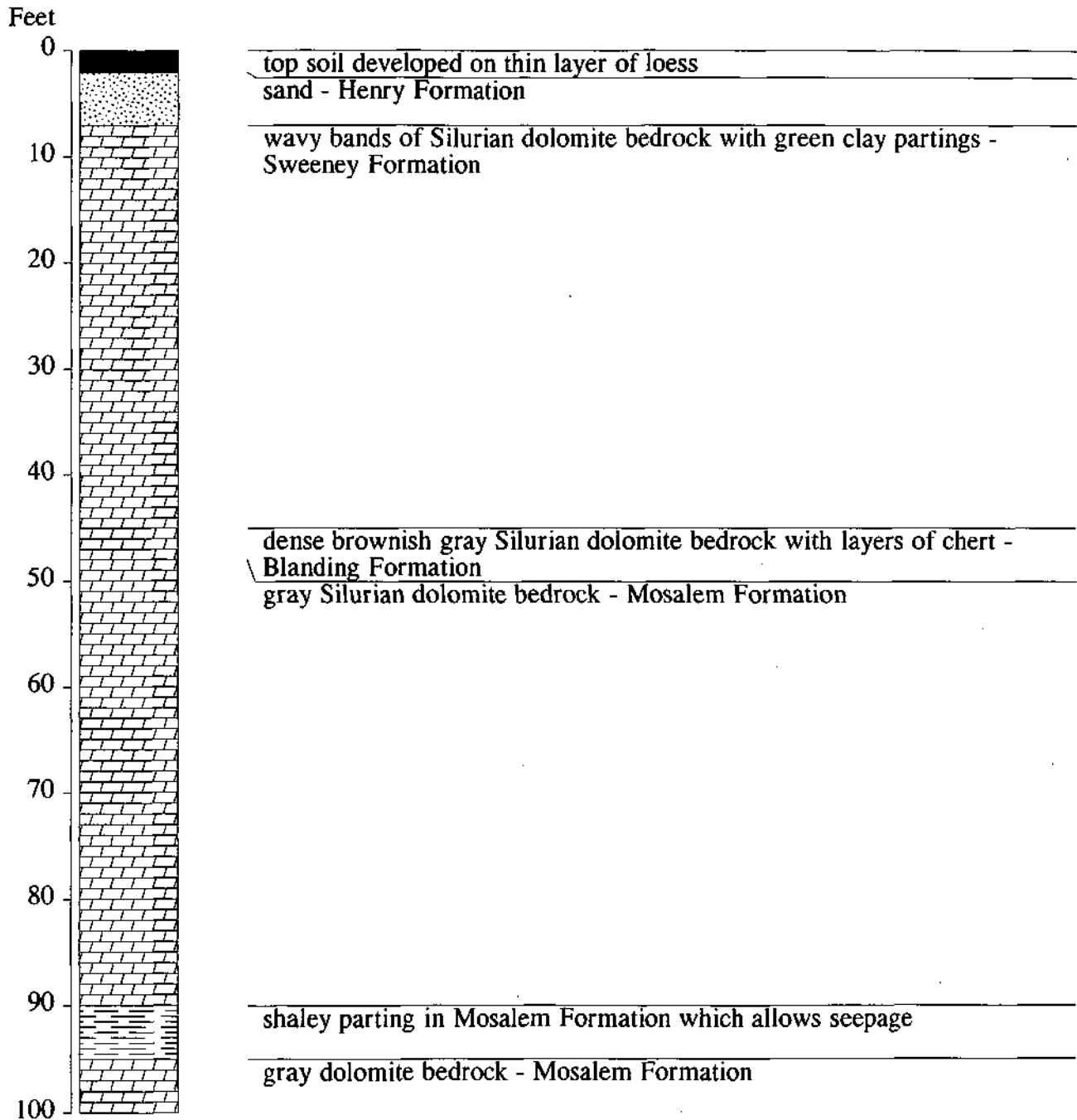
There are no sources upgradient of the preserve.

from surface water is moderate.

There is very localized high potential for siltation from the easement road in the north part of the preserve. There is low potential elsewhere in the preserve.

Hanover Bluff Nature Preserve
Jo Daviess County - 26N 2E Sections 20, 21, 28, 29
700

Stratigraphic Column based on information in dedication proposal



Site #: 79 NPC #: 34 Site: Heron Pond-Little Black Slough
County: Johnson Location: 14 13S 2E; 19 13S 3E; 23 13S 2E
24 13S 2E; 26 13S 2E; 27 13S 2E
29 13S 3E; 30 13S 3E; 31 13S 3E

Acres: 1939.0 7.5 Map(s): Cypress, Karnak, Vienna
Visit date: 02/27/96 Field crew: RCB MVM
Photos taken? No

NO SAMPLES TAKEN

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
railway		X	to west of Heron Pond

Is there potential impact from runoff? No.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Local flow directions are dependent on the proximity of the bedrock bluffs and the Cache River (or Black Slough).

surface water

Inputs include flooding of the Cache River. The western side of Little Black Slough is a drainage divide. Heron Pond and Little Black Slough drain to the Cache River.

OUTPUTS

ground water

Discharge occurs at the bases of bluffs surrounding the site. Local discharge also occurs to the Cache River and Little Black Slough.

surface water

Drainage from Little Black Slough to Cache River occurs in south part of section 24 (T13S, R2E).

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial

SOIL ASSOCIATION/SERIES

Karnak, Wellston/Muskingum Complex, Hosmer, Bonnie and Piopolis soils are present.

QUATERNARY DEPOSITS

Cahokia Alluvium/Equality Formation

BEDROCK

upper lithology: sandstone

supplemental description:

Cypress Sandstone (Mississippian)

depth: 20 feet

GEOMORPHOLOGY

The Cache River floodplain is a prominent landform of Heron Pond. Little Black Slough is a flat lowland valley (entrenched valley) surrounded by about 150 feet of relief in the bedrock uplands.

TOPOGRAPHY

The prominent feature is a floodplain with steep bluffs with over 150 feet of relief in places. Little Black Slough has up to 125 feet of relief on-site. Heron Pond has up to 175 feet of relief on-site with the highest elevations occurring in Section 19 (T13S, R3E).

Potential for Contamination:

of ground water

Minimal impacts are expected from septic systems on the high bluffs.

of surface water

Minimal impacts are expected from the small agricultural fields.

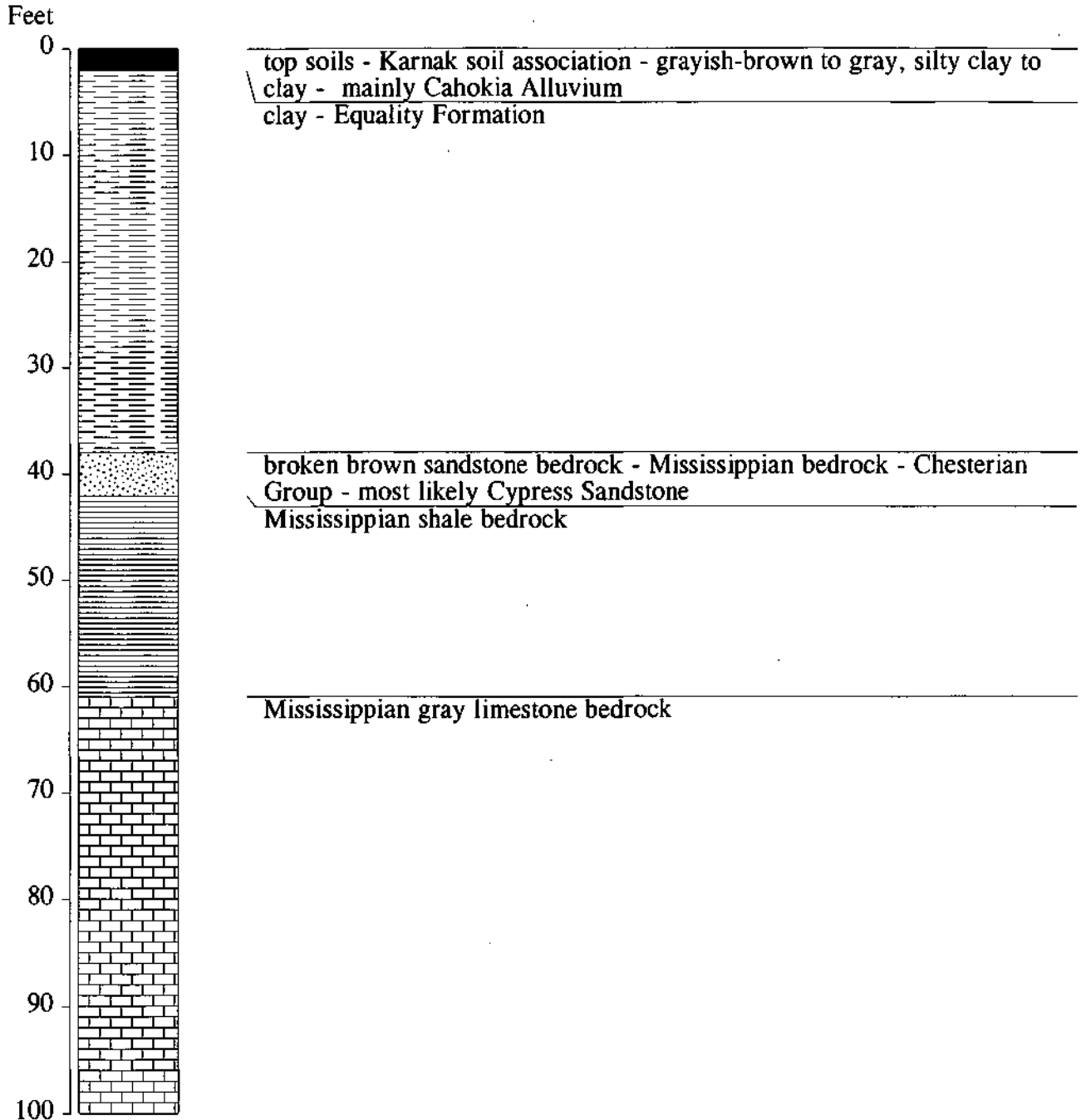
Initial Assessment of Site Vulnerability:

from ground water is very low.

from surface water is low.

Flooding may be the major problem.

Heron Pond - Little Black Slough
 Johnson Co. - 13S 2E Sec. 14,23,24,26,27; 13S 3E Sec. 19,29-
 31
 Stratigraphic Column based on log in Section 31, SE SE SW



Site #: 66 NPC #: 70 Site: Horseshoe Bottom
County: Vermilion Location: 6 20N 12W; 31 21N 12W; 36 21N 13W

Acres: 91.0 7.5 Map(s): Collison
Visit date: 09/04/96 Field crew: RCB RAL MJM
Photos taken? Yes Number: 2
Photo description: wooded wetland in an abandoned meander of
the Middle Fork of the Vermilion River
(noted on topo)

NO SAMPLES TAKEN

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	north and east of the site; buffered by hay/grass

NO RURAL RESIDENTIAL LAND USES NOTED

NO TRANSPORTATIONAL LAND USES NOTED

RECREATIONAL

	on site	off site	location & description
trail development	x		on north side and into the site; horse access

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Local ground-water flow is to the southwest to the Middle Fork of the Vermilion River.

surface water

Inputs include intermittent streams flowing from the north and east, overland flow, and flooding of the Middle Fork.

OUTPUTS

ground water

Flow to the southwest probably carries ground water off-site to the Middle Fork.

surface water

An intermittent stream within the meander exits to the south.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Huntsville Loam and possibly Blount Silt Loam (from an old soil survey)

QUATERNARY DEPOSITS

Cahokia Alluvium/Henry Formation/Glasford Formation (till)

GEOMORPHOLOGY

flat (less than 15 feet of relief)

TOPOGRAPHY

The site has minimal relief (less than 10 feet) within the floodplain, but has up to 50 feet of relief on the steep slopes leading to the upland.

Potential for Contamination:

of ground water

The primary sources are upgradient agricultural land uses, but the geology is not particularly sensitive.

of surface water

Buffer area in the uplands would inhibit surface runoff.

Initial Assessment of Site Vulnerability':

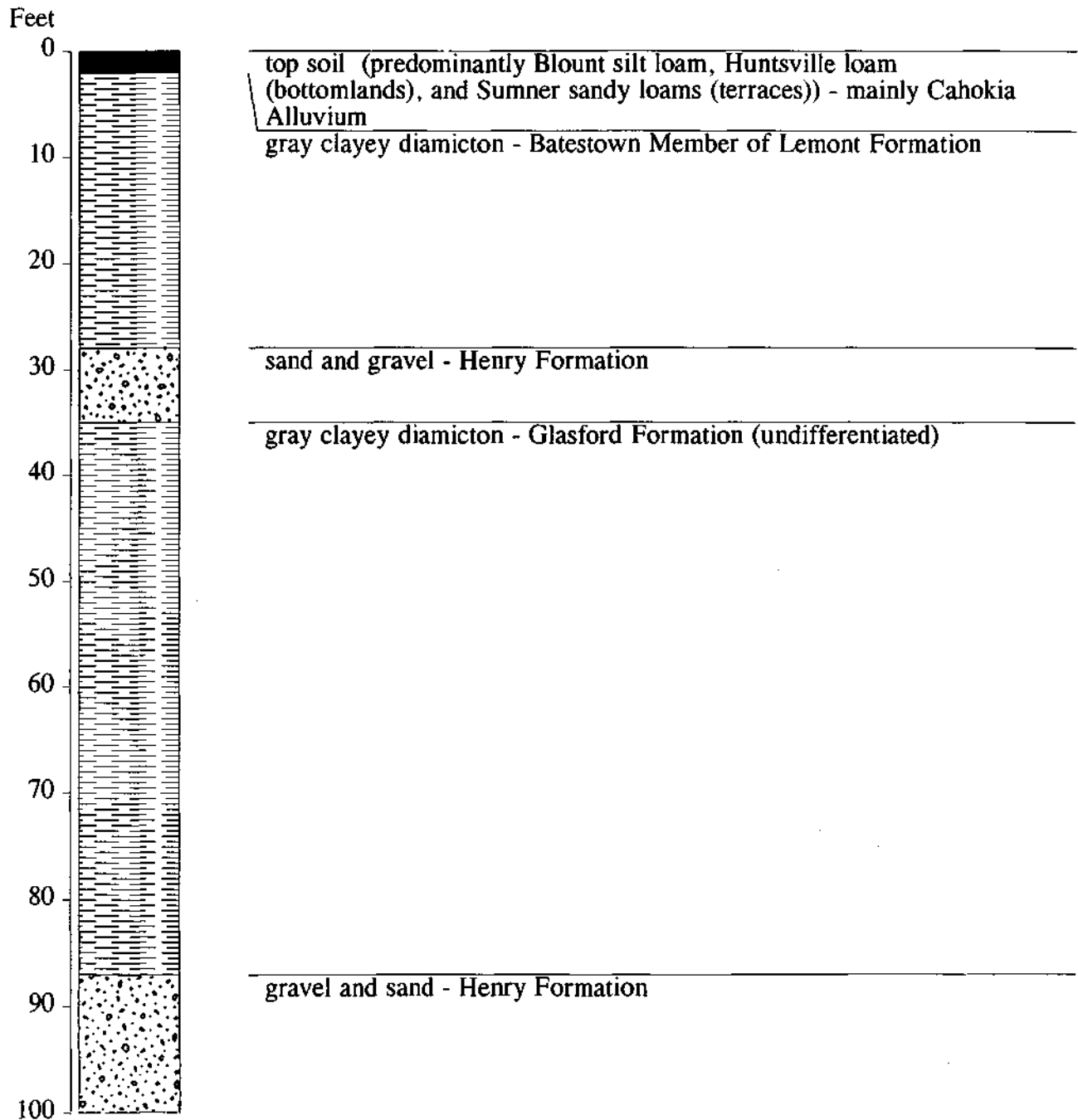
from ground water is low.

Vulnerability is low because of the geology and buffering from surrounding agricultural lands.

from surface water is low.

Horseshoe Bottoms Nature Preserve
Vermilion Co. - 20N 12W Sec.6;21N 12W Sec.31;21N 13W Sec. 36
640

Stratigraphic Column based on log in Section 31: NE NW NW (column is representative of uplands)



Site #: 84 NPC #: 19 Site: Horseshoe Lake
 County: Alexander Location: 9 16S 2W; 10 16S 2W; 15 16S 2W
 16 16S 2W; 17 16S 2W
 Acres: 492.0 7.5 Map(s): Cache, Tamms
 Visit date: 02/28/96 Field crew: RCB MVM
 Photos taken? Yes Number: 2
 Photo description: at sampling location

SAMPLE INFORMATION

Source: pond
 from a surface depression approximately 3 inches
 deep (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/28/96		7.5	5.0	110	76

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	The west tract is surrounded by fields at a slightly higher elevation on all sides.

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (inferred septic system)		X	A few houses are about 1/2 mile to the west. No impact is expected to the site.

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	service road (north) and other roads to the west, east and south

Is there potential impact from runoff? Yes.
from the park road to the north

RECREATIONAL

	on site	off site	location & description
other	X	X	'conservation area' - Horseshoe Lake State Conservation Area surrounds the site

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Shallow flow comes from surrounding lands at higher elevations.

surface water

The ditch on the north side seems to flow in from the west. Overland flow from agricultural fields may occur as well as flooding from Horseshoe Lake.

OUTPUTS

ground water

Some discharge may occur to Horseshoe Lake to the west and east. Expected regional flow is to the Mississippi River to the west.

surface water

no distinct outputs

GEOLOGY:

Primary geologic origin(s): lacustrine, fluvial/alluvial

SOIL ASSOCIATION/SERIES

Alvin, Okaw, Jacob, Darwin, and Karnak series are present.

QUATERNARY DEPOSITS

Cahokia Alluvium/Henry Formation

BEDROCK

upper lithology: limestone
supplemental description:

Devonian limestone and cherts

depth: 150 feet

GEOMORPHOLOGY

The site is in a small basin on the inner side of an abandoned meander bend (Horseshoe Lake). Many small depressions with water are within the basin.

TOPOGRAPHY

The site is generally flat, but has a slight increase in elevation out of the subtle basin to the surrounding agricultural fields (less than ten feet of relief).

Potential for Contamination:

of ground water

Nitrates/pesticides may occur in ground water due to nearby agricultural fields. Shallow flow is most likely toward the nature preserve due to elevation differences.

of surface water

Road runoff may enter the site on the north.

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

Vulnerability is moderate for the west tract and low for the east tract since it is an island.

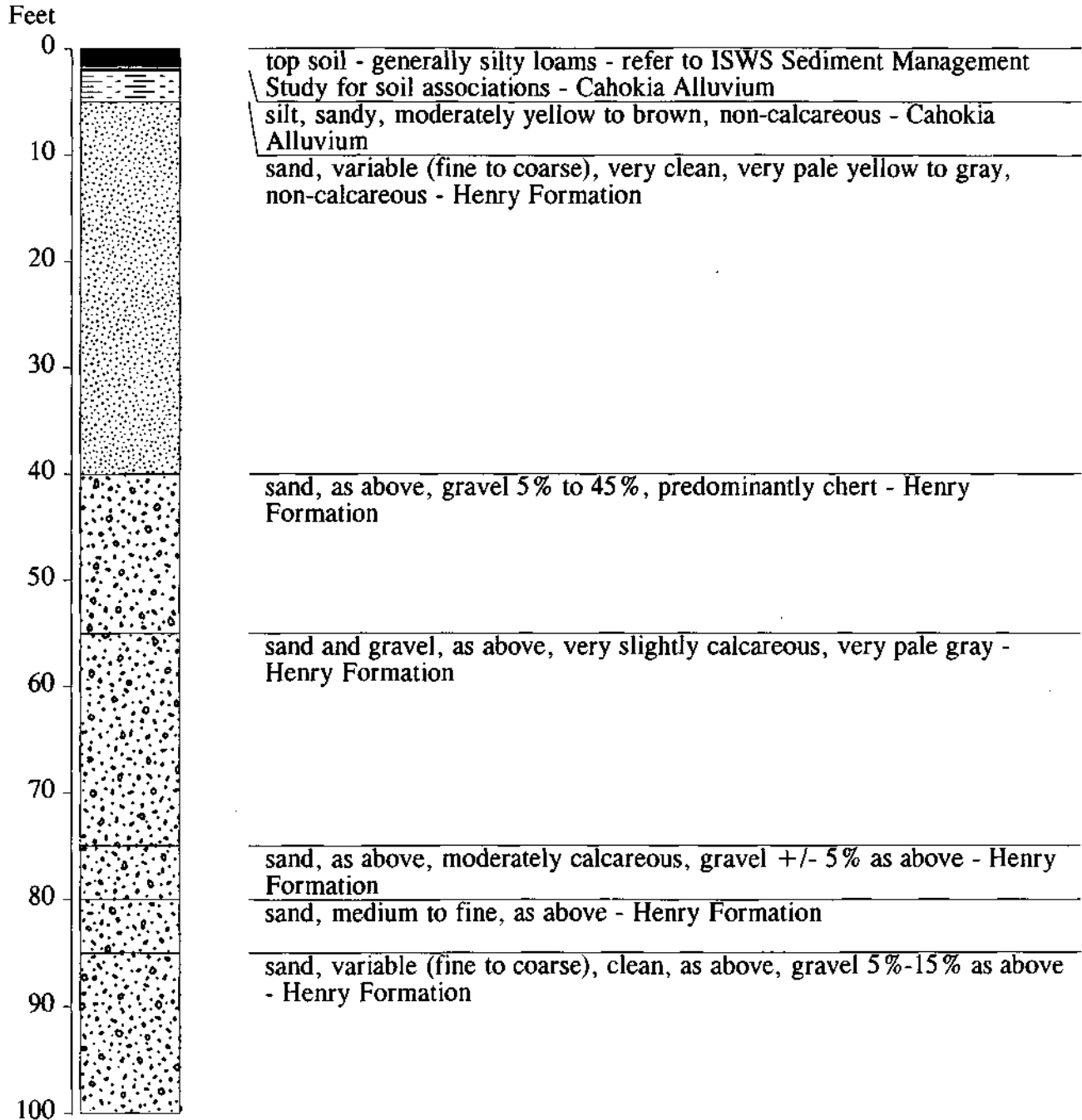
from surface water is low.

Additional Comments

Only the west tract was visited. Unless noted otherwise, comments apply to the west tract.

Horseshoe Lake Nature Preserve
 Alexander County - 16S 2W Sections 9, 10, 15, 16, 17
 330

Stratigraphic Column based on log in Section 4: 1000' SL 150' WL, SW, NW SW
 SW



Site #: 70 NPC #: 199 Site: Howard's Hollow Seep
 County: Vermilion Location: 24 18N 11W
 Acres: 30.0 7.5 Map(s): Danville SE
 Visit date: 06/28/95 Field crew: RCB RAL HAW MVM
 Visit date: 09/04/96 Field crew: RCB RAL MJM
 Photos taken? Yes Number: 1
 Photo description: seep area where riprap along creek wall
 has been reinforced

SAMPLE INFORMATION

Source: seep

from Howard Hollow's seeps near a tributary of
 the Vermilion River (on terrace ?)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	09/04/96	12:35 P	7.1	18.6	800	-114

PAST ON-SITE LAND USE:

grazing, cropping, and minor residential use

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	approximately 1/8 - 1/4 mile west of site
drainage wells/tile outlets/ditches	x		culverts, corrugated pipe, etc.

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (inferred septic system)	X	X	There is an old dug well on-site with metal piping and clay tile. Off-site there are county forest preserve facilities and residences on the west side of the site.

TRANSPORTATIONAL

	on site	off site	location & description
gravel road	X		on-site trail
paved road		X	1/8 mile west of site
railway		X	'dirt road' - Access road to Interstate Power Co. easement is in north part of preserve.

Is there potential impact from runoff? Yes.

Only minor potential is expected from paved roads because of buffering.

RECREATIONAL

	on site	off site	location & description
trail development	x		throughout
other			The septic system for the forest preserve nature center may discharge towards a retention pond near the site. An overflow pipe from the pond leads to the creek which flows through site.

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Local ground-water flow is expected from the uplands toward the tributary of the Vermilion River which flows through the site. In the hollow, flow is west to east.

surface water

Inputs are slope wash (little vegetation is on the slopes that would slow minor slope wash) and a creek which flows south to north through the site.

OUTPUTS

ground water

Primary outputs are seepage on-site and local discharge to Willow Creek.

surface water

via Willow Creek

ALTERATIONS

pipes, tile, trails and riprap along creek wall (to help prevent erosion along Willow Creek)

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial

SOIL ASSOCIATION/SERIES

Vance, Drummer and eroded calcareous gravelly loam (noted from old survey)

QUATERNARY DEPOSITS

Stream cut shows about 3-4 feet of sand and gravel over weathered jointed shale. Other portions of the site contain Peoria Silt/Batestown Member/Henry Formation/Glasford Formation.

BEDROCK

upper lithology: shale

supplemental description:

About 40 feet of shale underlies 5-7 feet of sand on the hilltop. Shale was noted in the stream with large (about 2.5 foot diameter) boulders.

GEOMORPHOLOGY

stream dissected upland with some valley fill

TOPOGRAPHY

moderate to high relief (about 90 feet)

Potential for Contamination:

of ground water

Site has geology which is not particularly sensitive (shale) and minimal potential sources. Some agriculture is present nearby.

of surface water

Slope wash from uplands is the primary concern at Howard's Hollow. While it may not affect the seeps directly, contamination may be transported by the creek.

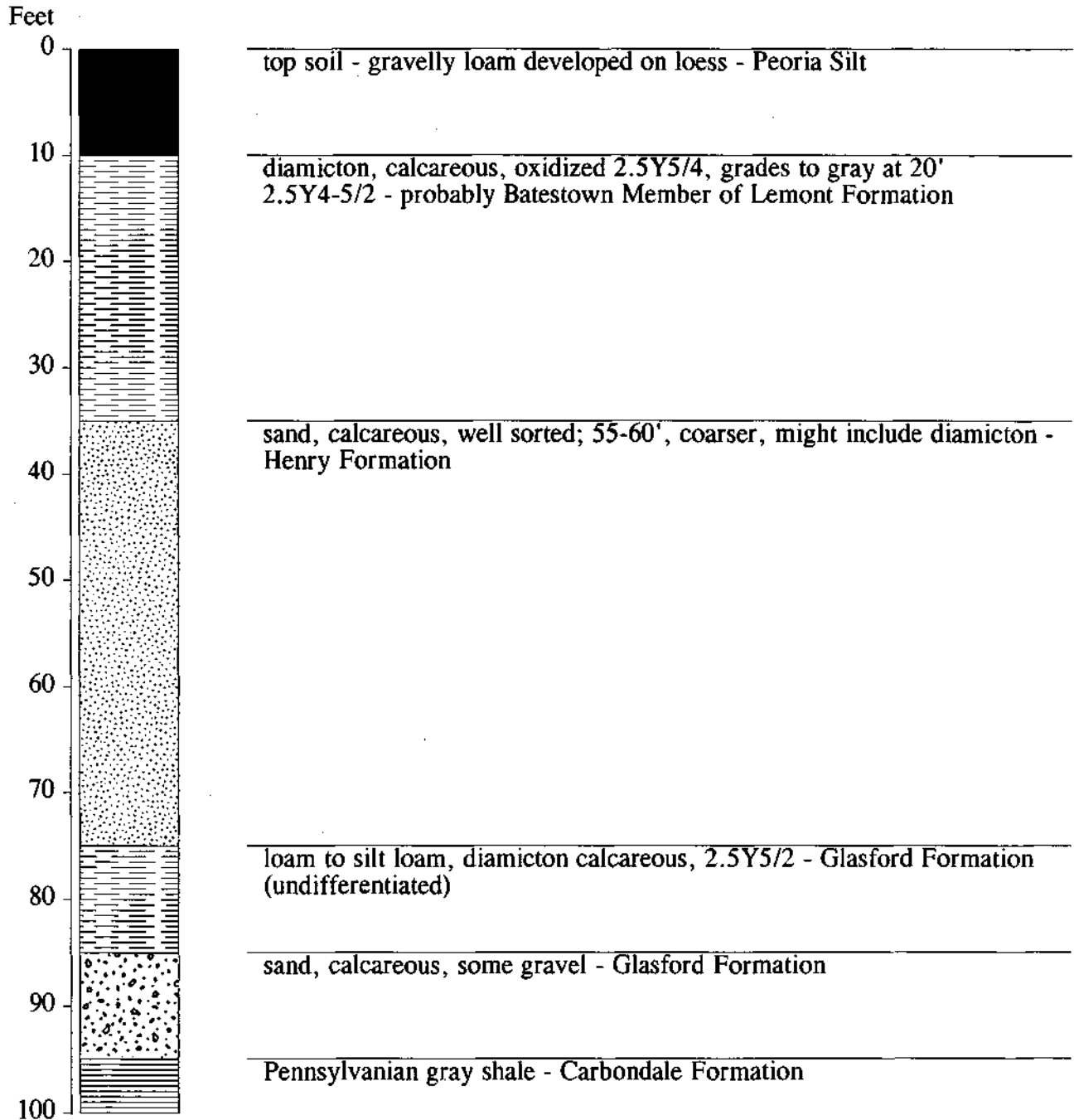
Initial Assessment of Site Vulnerability:

from ground water is low.

from surface water is low to moderate.

Howard's Hollow Seep Nature Preserve
 Vermilion County - 18N 11W Section 24
 600

Stratigraphic Column based on log in Section 24: 30'SL 200'WL of NE NW (from Forest Glen Seep file) S.S. by W.H. Johnson



Site #: 4 NPC #: 1 Site: Illinois Beach
 County: Lake Location: 2 45N 12E, 3 45N 12E, 10 45N 12E
 11 45N 12E, 34 46N 12E, 35 46N 12E

Acres: 829.0 7.5 Map(s): Zion
 Visit date: 07/10/96 Field crew: RCM MVM
 Photos taken? Yes Number: 3
 Photo description: panoramic view from south to north of
 Dead River

SAMPLE INFORMATION

Source: stream
 at Farnum Point along the Dead River; noted on
 topo

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/10/96	01:12 P	9.4	25.0	810	43

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
stockpiles			
other		X	'gypsum' - south of site (downgradient)
sewers		X	one mile south of site (downgradient)
other		X	'buildings' - west of site on bluff top

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
dirt road	x		service road
paved road	x		extensive in the north portion
railway		X	west of site

Is there potential impact from runoff? Yes.
because of large amounts of traffic

RECREATIONAL

	on site	off site	location & description
outhouses	x		north end
trail development	x		extensive throughout
parking	X		north end

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

General ground-water flow direction is from northwest to southeast toward Lake Michigan. Ground-water recharge occurs from the west from the morainal bluff.

surface water

from numerous gullies on morainal upland

OUTPUTS

ground water

Lake Michigan and surface discharge to wetlands are the primary ground-water outputs.

surface water

The Dead River flows to Lake Michigan.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, eolian

SOIL ASSOCIATION/SERIES

Well-drained Entisols are in the uplands (dunes) (e.g., Chelsea) and poorly-drained soils (e.g., Grundy) are in lowlands.

QUATERNARY DEPOSITS

Parkland Sand and Henry Formation (about 30 feet) overlying Wadsworth Till

GEOMORPHOLOGY

beach-ridge/dune complex

TOPOGRAPHY

Less than 20 feet of relief occurs within the ridge and swale topography which is sloped slightly to the southeast and Lake Michigan.

Potential for Contamination:

of ground water

from roads, heavy traffic, railroad to west and commercial uses to west

of surface water

from road runoff, railroad to west, and residential/commercial uses to west

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

Northern part of the preserve is more vulnerable than southern part.

from surface water is low to moderate.

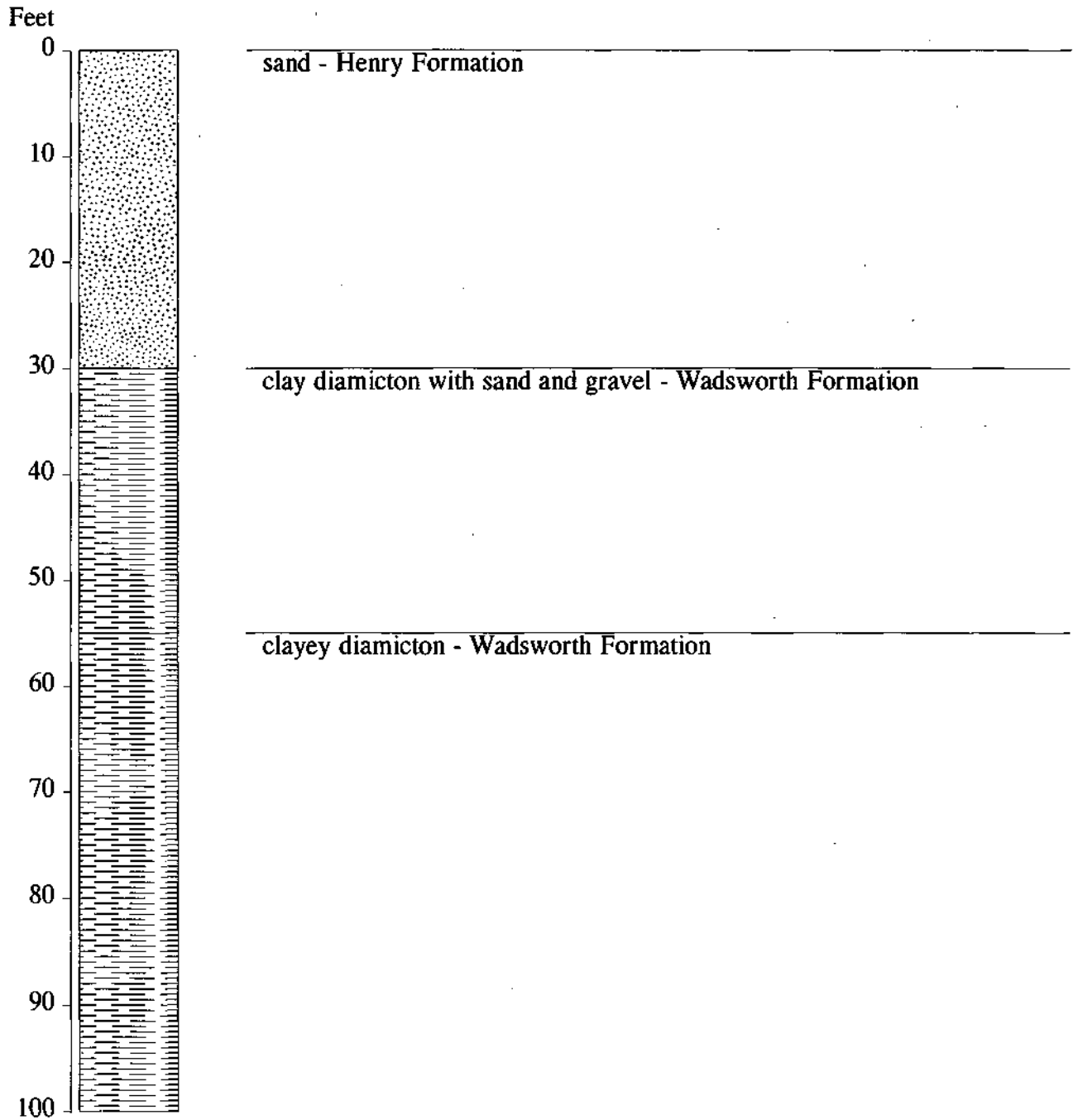
same as 'from ground water' above

Additional Comments

Both surface-water and ground-water vulnerability would be greater (moderate) along the heavily trafficked roads due to oils etc. expected in the road runoff. If salts are used to deice roads, this could affect surface water and ground water.

Illinois Beach Nature Preserve
Lake County - 45N 12E Sec. 2, 3, 10, 11; 46N 12E Sec. 34, 35
590

Generalized Stratigraphic Column based on available logs and NPC file



Site #: 22 NPC #: 135 Site: Julia M. & Royce L. Parker Fen
 County: McHenry Location: 13 44N 7E
 Acres: 10.0 7.5 Map(s): McHenry
 Visit date: 06/20/96 Field crew: RAL HAW
 Photos taken? No

SAMPLE INFORMATION

Source: stream

gently flowing stream moving through fen proper
 about 200 feet northeast from ISGS piezometer
 with datalogger (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	06/20/96	11:00 A	7.6	16.3	720	-28

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
domestic wells		X	Rural subdivisions are cropping up to the west off Country Club Road.

underground disposal	X	As with rest of McHenry County, septic systems are scattered throughout the area. Jewel Hahn is particularly concerned about the large system serving the Resurrection Center located west of the fen on Country Club Road. A drainageway was constructed many years ago connecting the Center property with the northwest corner of the fen. Homes overlook the area from the north and northeast.
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NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	located to the southwest behind the hilltop facing the fen; These can be seen from Country Club Road.

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	Cherry Valley Road is east of the fen, but not adjacent and likely downgradient.

Is there potential impact from runoff? No.

RECREATIONAL

	on site	off site	location & description
trail development	X		some small trail development but most recent use has probably been by ISGS researchers

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Obvious ground-water seeps emanating from southern hillside at about 900 feet. Ponds along hillside are spring fed. Flow is generally from south or southwest to north or northeast. Contribution is also from west and north on other boundaries of the fen. (Suggest talking with Scott Meyer or Mark Sievers (ISWS) to conceptualize flow system.)

surface water

Ponds are connected by a series of spillways or culverts from top (southwest) to bottom (large lake on north and east). A culvert discharges under Cherry Valley Road to the east.

OUTPUTS

ground water

Discharge is most likely to surface ponds, then out to the stream to the east.

surface water

Discharge is to the east beneath Cherry Valley Road, eventually northeast to Boone Creek and out to the Fox River several miles east.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Lena muck is in the fen. Casco and Fox silt loam comprise the wooded uplands. Grayslake Peat is mentioned in the INA inventory.

QUATERNARY DEPOSITS

Upland materials may be either Haeger Till overlying Wadsworth or till materials (30+ feet) on top of sand and gravel. Seepage face occurs around 900 feet elevation which is a likely interface with sand and gravel. Deposits in the fen are Grayslake Peat/Henry Formation/Yorkville Member.

BEDROCK

upper lithology: limestone

depth: 200 - 270 feet

GEOMORPHOLOGY

located on the edge of an outwash plain

TOPOGRAPHY

Uplands look over the fen from the south. Top of the ridge reaches 960 feet while the bottom of the property at Cherry Valley Road culvert is 850 feet. Slope on the upland is quite steep ($50'/1000' = 1/20 = 5\%$).

Potential for Contamination:

of ground water is moderate.

of surface water is low to moderate.

Within the fen, potential is as noted.

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

see 'Additional Comments'

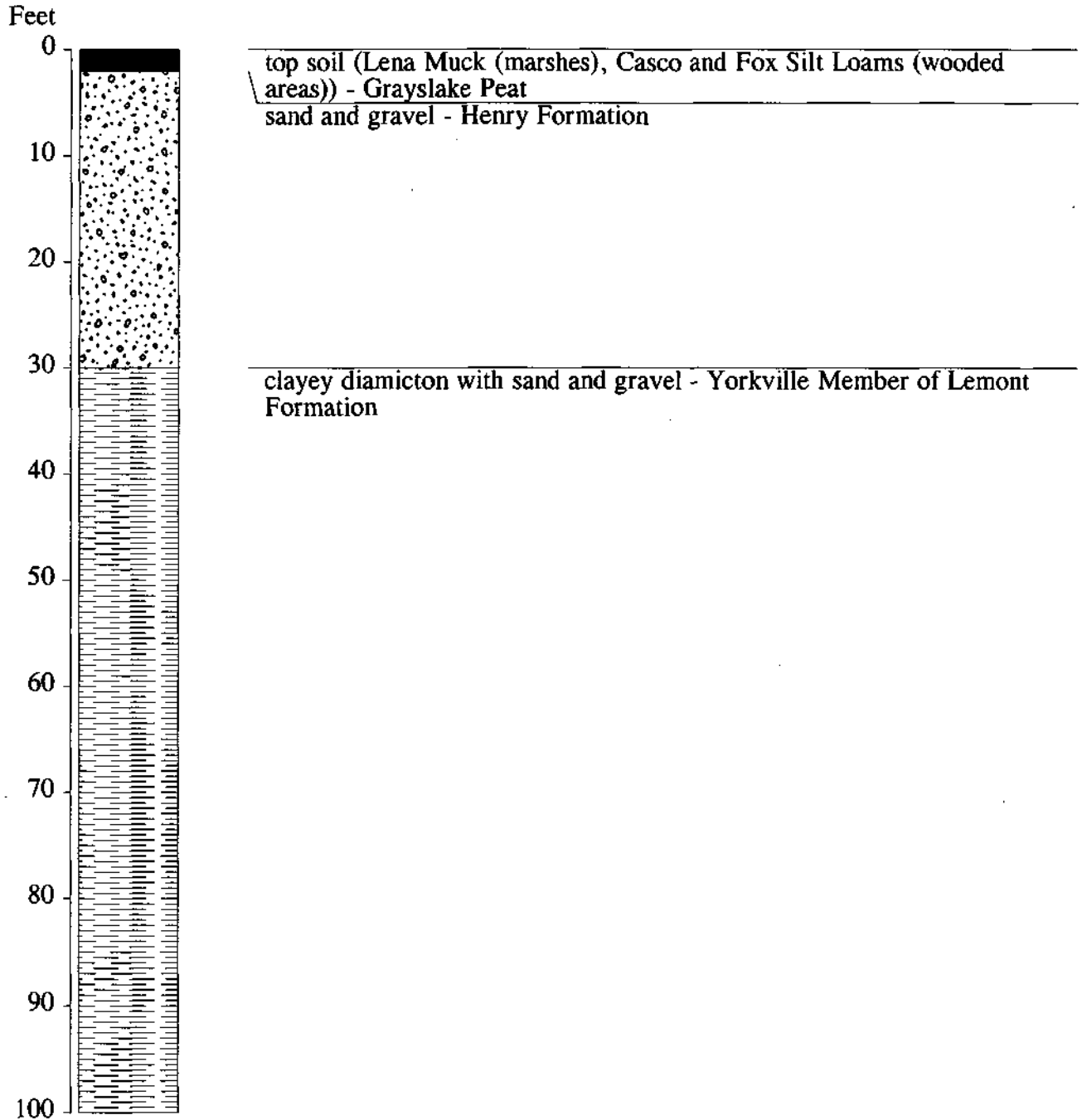
from surface water is moderate.

Additional Comments

An apparent connection of sand and gravel to deposits located to the west and increasing development of that area by housing with septic systems has potential for problems. There are no obviously harmful land uses directly adjacent to the site (sketch on file). Septic systems may have an impact on ground-water quality from far distances. Anecdotal information from Jewel Hahn suggests Resurrection Center has increased flows (and sediment) through the pond system creating siltation and algae problems in the bottom lake. There is no high density housing immediately adjacent to the fen. Most of the development is occurring on Country Club Road about 1/2 mile west-southwest of fen. Jewel indicated she determined peak flows over the road (or through the culvert?) at 750 gallons per minute!

Parker Fen Nature Preserve
McHenry County - 44N 7E Section 13
880

Generalized Stratigraphic Column based on logs in Section 13



Site #: 19 NPC #: 51 Site: Kettle Moraine
 County: McHenry Location: 1 44N 8E, (NE SE); 1 44N 8E
 (SE NE); 6 44N 9E, (NW); 7 44N 9E
 (NE)
 Acres: 242.0 7.5 Map(s): Wauconda
 Visit date: 06/18/96 Field crew: RAL HAW
 Photos taken? Yes Number: 2
 Photo description: R6 P 14-15 taken from south shore
 (looking north) of Wilderness Lake

SAMPLE INFORMATION

Source: wetland

Sample 1: at west edge of Pike Marsh about
 halfway up the west boundary; noted on topo
 lake

Sample 2: at south shore of Tomahawk Lake (north
 of Leatherleaf Bog); noted on topo

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	06/18/96	09:30 A	6.9	20.8	260	117
Sample 2	06/18/96	11:00 A	8.7	24.5	280	22

PAST ON-SITE LAND USE:

This area has been part of Moraine Hills State Park for many years. The two preserves (Leatherleaf Bog and Pike Marsh) are located within state park boundaries although Pike Marsh forms the southeast boundary of park.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
domestic wells		X	Wells are associated with nearby residences. Septic systems are within a subdivision on the northwest corner of park. These are removed from the preserve boundary about 1000 feet. Also scattered systems are on the east side along Lily Lake Road, but they are not dense.
underground disposal		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	Gravel pits are abundant near the state park boundary; especially to the north, east and south.
pipelines		X	Gas pipelines cross the southern boundary of Pike Marsh within the same right of way as power lines.
other		X	'auto repair shop' - along Rt. 120 at entrance to subdivision about 4000 feet north of Leather Leaf Bog boundary. Minimal impact is expected.

AGRICULTURAL

	on site	off site	location & description
row crops		X	south of River Road, downgradient of preserve; minimal impact expected

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road	X		

Is there potential impact from runoff? Yes.

Possible impact to Pike Marsh from road deicing salts where road is adjacent to the marsh (sketch on file).

RECREATIONAL

	on site	off site	location & description
outhouses	X		only a few;not directly adjacent to preserve boundary, but within state park
trail development		X	around Leatherleaf Bog; A boardwalk out into Pike Marsh is under repair although no repair work was evident.

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Primary inputs to nature preserve are expected to come 1.) locally from adjacent hills and 2.) regionally from the northeast. For example, at Pike Marsh contributions from adjacent hills come from all directions while deeper more regional flow crosses the site from northeast to southwest towards the Fox River. A similar scenario is probably true at Leatherleaf Bog, however, the Fox River trends more north-south, so there may be more of a westerly component to regional flow.

surface water

Pike Marsh: localized runoff from surrounding hills; Ponds in southeast contribute to drainage way that runs into and through Pike Marsh. Leatherleaf Bog: Localized runoff comes from surrounding hills. Other inputs are Tomahawk Lake (where a new culvert runs under the bike trail) and possibly from ponds to the west of Tomahawk Lake.

OUTPUTS

ground water

Local seepage into marsh areas occurs. Regional movement is to the southwest and west.

surface water

A culvert exits at north end of Pike Marsh. Drainage ways occur in the southeast part of Leatherleaf Bog.

ALTERATIONS

Ditching has occurred at both Pike Marsh and Leatherleaf Bog. Damming in northeast part of Leatherleaf Bog has also occurred (on the south edge of Tomahawk Lake).

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Fox-Homer-Casco soil association; Houghton Peat is dominant in Pike Marsh with Wallkill and Eylar silt loams occurring along the marsh periphery. In Leatherleaf Bog, Houghton Muck, Rodman gravelly loam, and Casco and Fox silt loams are all present.

QUATERNARY DEPOSITS

Grayslake Peat/Henry Formation/Wedron Formation; Over eighty feet of Quaternary deposits are present (most likely from the Equality and Wedron Formations). Grayslake Peat is at the surface and significant thicknesses of sand or sand and gravel are near the surface.

BEDROCK

upper lithology: dolomite

GEOMORPHOLOGY

Karnes, kettles, end moraine and delta features are present. A ridged till plain is the major topographic feature.

TOPOGRAPHY

Areas within the park can be steep with tops of kames at elevations of over 800 feet MSL and wetland boundaries around 735 feet.

Potential for Contamination:

of ground water is moderate.

of surface water is moderate.

Initial Assessment of Site Vulnerability:

from ground water is moderate.

Sensitive geology occurs on and off site, but potential contamination sources are questionable.

from surface water is moderate.

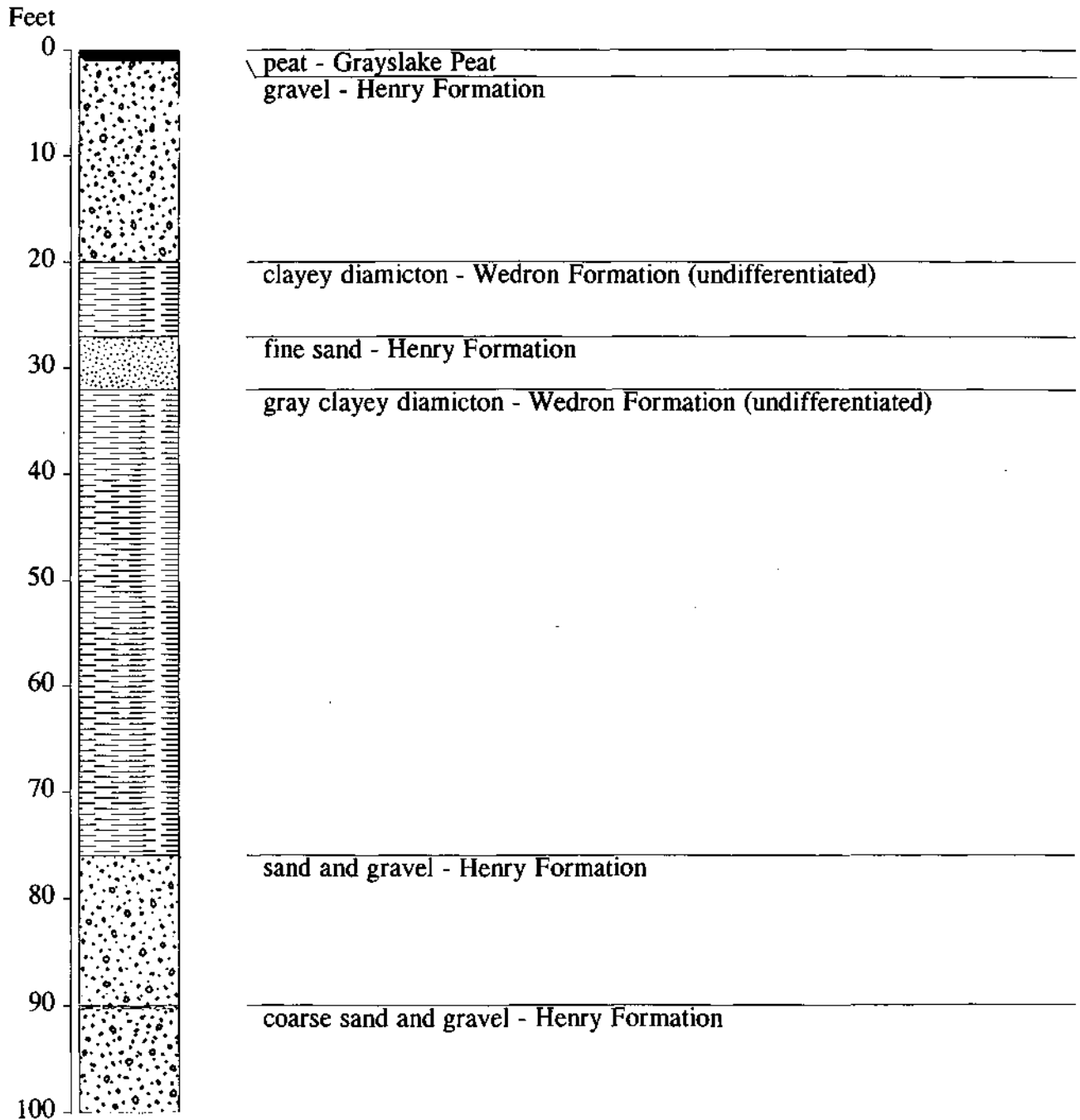
Areas of higher vulnerability are primarily at Pike Marsh in the southeast corner and along west edge.

Additional Comments

For ground-water sensitivity: Residences (i.e., septic systems) are not overly dense and are generally not directly adjacent to preserve boundaries. Actual impact of gravel mining on water quality and quantity is not easily defined.

Kettle Moraine Nature Preserve
 McHenry Co. - 44N 8E Sec. 1; 44N 9E Sec. 5, 6, 7
 750

Stratigraphic Column based on log in Section 7: NW SW SE (areas to the NW may have a thin cover of Tiskilwa Till underlying Peoria Silt)



Site #: 53 NPC #: 53 Site: Kinnickinnick
 County: Boone Location: 6 45N 3E; 31 46N 3E
 Acres: 102.0 7.5 Map(s): Belvidere NW
 Visit date: 04/12/96 Field crew: RAL SCM
 Photos taken? Yes Number: 2
 Photo description: along Kinnickinnick Creek (noted on topo)

NO SAMPLES TAKEN

PAST ON-SITE LAND USE:

Eastern part was homesteaded in 1850's. A stagecoach trail ran nearby. Other on-site activities included grazing, as well as, timbering and cropping in the uplands.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	a few suburban residences along Caledonia Road east of nature preserve
domestic wells		X	see 'lawns' above
underground disposal		X	see 'lawns' above

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	all surrounding areas
pasture		X	all surrounding areas
livestock		X	all surrounding areas

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	access road through conservation area
paved road		X	Hamisch Road (to west) and Caledonia Road (to east)
Is there potential impact from runoff? Yes. from gravel roads			

RECREATIONAL

	on site	off site	location & description
other		X	'conservation area' - Facilities associated with the operation and maintenance of the conservation area (e.g., pit toilets, wells, etc.) are located in all directions from the preserve.

ON-SITE MISCELLANEOUS

location
flood debris along the channel of the Kinnikinnick Creek

HYDROLOGY:

INPUTS

ground water

Shallow ground-water movement is generally to the northwest toward the stream channel of Kinnikinnick Creek.

surface water

Water movement in channel of Kinnikinnick Creek enters nature preserve on east side.

OUTPUTS

ground water

Seepage into channel of Kinnikinnick Creek and adjacent scours on the floodplain.

surface water

Water in Kinnikinnick Creek flows out of the preserve on the west side.

ALTERATIONS

The draft management plan indicates that upland springs have dried up or become seeps presumably due to tile drainage and ditching in the uplands.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Whalan/ New Glarus, Dunbarton, St. Charles, Kidder and Millington

QUATERNARY DEPOSITS

Argyle Diamicton/Winnebago Formation sand and gravel

BEDROCK

upper lithology: limestone, dolomite
supplemental description:

Uppermost bedrock is 200 to 250 feet of Galena -
Platteville Dolomite

depth: 0 - 113 feet

GEOMORPHOLOGY

The nature preserve is dominated by a valley incised into the Argyle Till Member (Winnebago Formation) and underlying Galena - Platteville Dolomite by Kinnikinnick Creek. The valley is bounded by steep sided slopes in places. Maximum relief is 80-90 feet.

TOPOGRAPHY

Steep slopes occur along Kinnikinnick Creek with about 80-90 feet of relief from northeast to southwest of the site.

Potential for Contamination:

of ground water

 Preserve is buffered from agricultural land uses.

of surface water

 Preserve is buffered from agricultural land uses.

Initial Assessment of Site Vulnerability:

 from ground water is low to moderate.

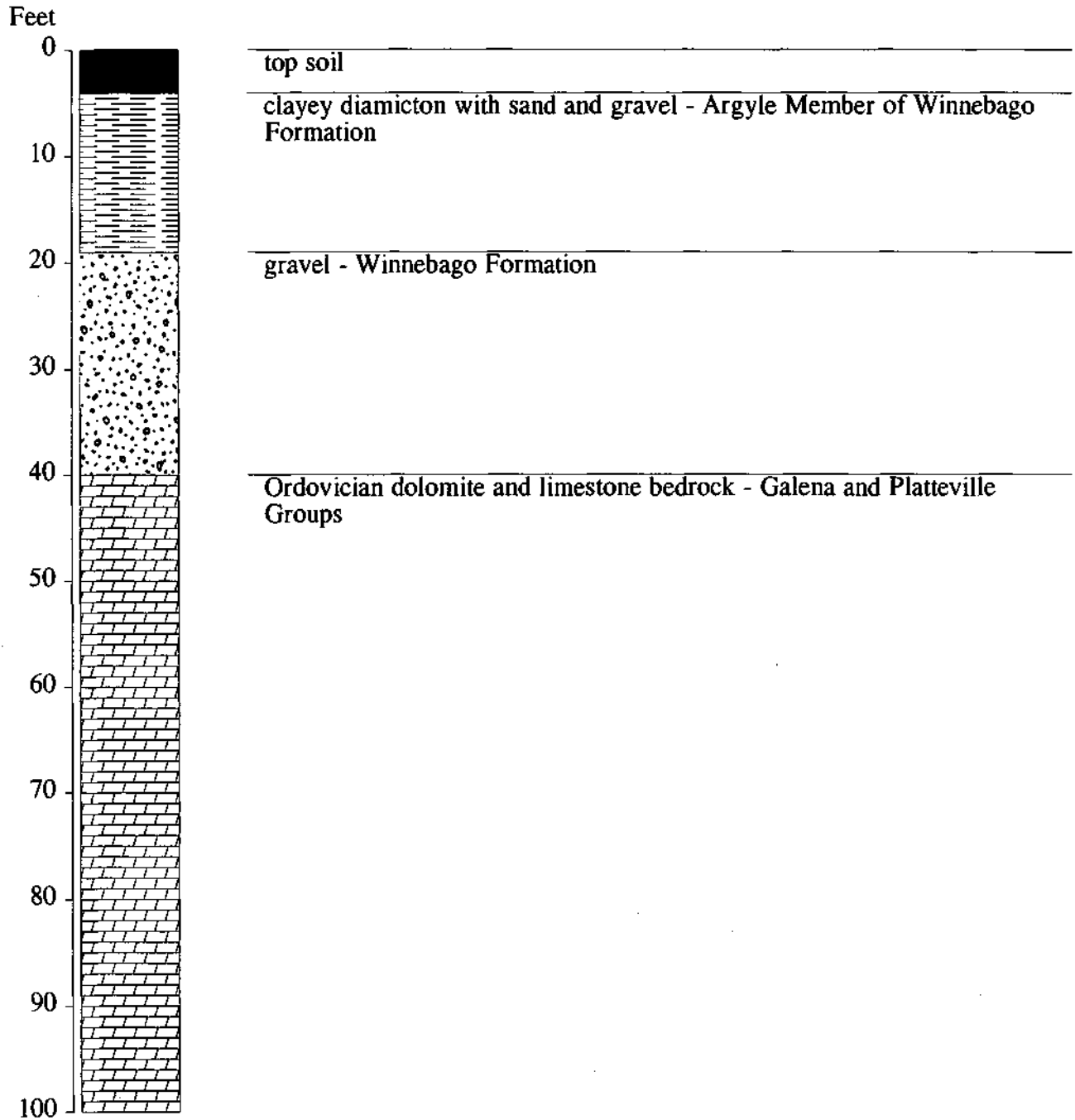
 from surface water is low to moderate.

Additional Comments

Draft master plans indicate that the area surrounding the nature preserve is targeted for development. It should be noted that houses (and associated septic tanks) will have an effect on water quality that is inversely proportional to septic tank spacing.

Kinnikinnik Creek Nature Preserve
Boone County - 45N 3E Sec. 6; 46N 3E Sec. 31
850

Stratigraphic Column based on log in Section 31: NE NE SE



Site #: 27 NPC #: 223 Site: Kiswaukeee Fen
 County: McHenry Location: 10 43N 7E; 11 43N 7E; 14 43N 7E
 15 43N 7E
 Acres: 36.6 7.5 Map(s): Huntley
 Visit date: 06/21/96 Field crew: RAL HAW
 Photos taken? No

NO SAMPLES TAKEN

PAST ON-SITE LAND USE:

Southern buffer was used for ag row crops. Attempts were made in the early 1900's to drain the area as part of a now defunct drainage district—this created the channelized stream which forms the northern border of the nature preserve.

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	immediately adjacent to southern boundary on western half; This property has been platted and will be subdivided by owners of the golf course.

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (infers septic system)		X	on north side of preserve; An old horse stable, which is up for sale, forms most of the northern boundary.

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	Paved roads form the eastern and western boundaries.

Is there potential impact from runoff? Yes.
 Primary sources are agricultural fields and the golf course. Agricultural fields are being developed and may have lawns and lawn chemical use in the future.

RECREATIONAL

	on site	off site	location & description
other		X	'golf course' - immediately adjacent to the south boundary; A 'buffer zone' between the course and the preserve is discussed in several documents, but this buffer is very narrow.

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Ground water must be discharging as seeps on the north-facing slope which forms the southern boundary of the fen. It is assumed the ground-water surface is quite shallow.

surface water

Surface water flows from east to west in a channel which forms northern boundary of nature preserve. Upstream area east of Priengnitz Road has been subdivided with the golf course in the lower areas. Wetland has been maintained in this area as well.

OUTPUTS

ground water

Ground water must be discharging to the surface in the preserve. There maybe some westerly component with surface-water flow.

surface water

Flow goes out the west end through a culvert under Haligus Road.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Flat area in the fen is Houghton Muck, Drummer, Lena Muck and Harpster silty clay loam. Upland soils are Hennepin Loam, LaRose silt loam and Varna silt loam.

QUATERNARY DEPOSITS

Local surficial deposits are largely Henry Formation which appears to be quite stony/gravelly on the southern hillside overlooking the fen. Sand and gravel deposits may occur at shallow depth but most well records in the area only show consistent occurrence of sand and gravel at depths of about 100 feet or more. Grayslake Peat/Henry Formation/Yorkville Member/Tiskilwa Member

BEDROCK

upper lithology: limestone

depth: 180 - 220+ feet

GEOMORPHOLOGY

gently rolling morainal deposits;The fen occurs in a low area in an east-west trending small valley.

TOPOGRAPHY

gently rolling topography; Upper end of the fen is 870 feet and the lower end is about 860 feet. Uplands to the south climb to 900 feet. Slope is approximately 3% (30'/1000'). Locally, greater slopes are at the edge of the golf course, especially by tee boxes on west side of Priengnitz Road.

Potential for Contamination:

of ground water is moderate to high.

of surface water is moderate to high.

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

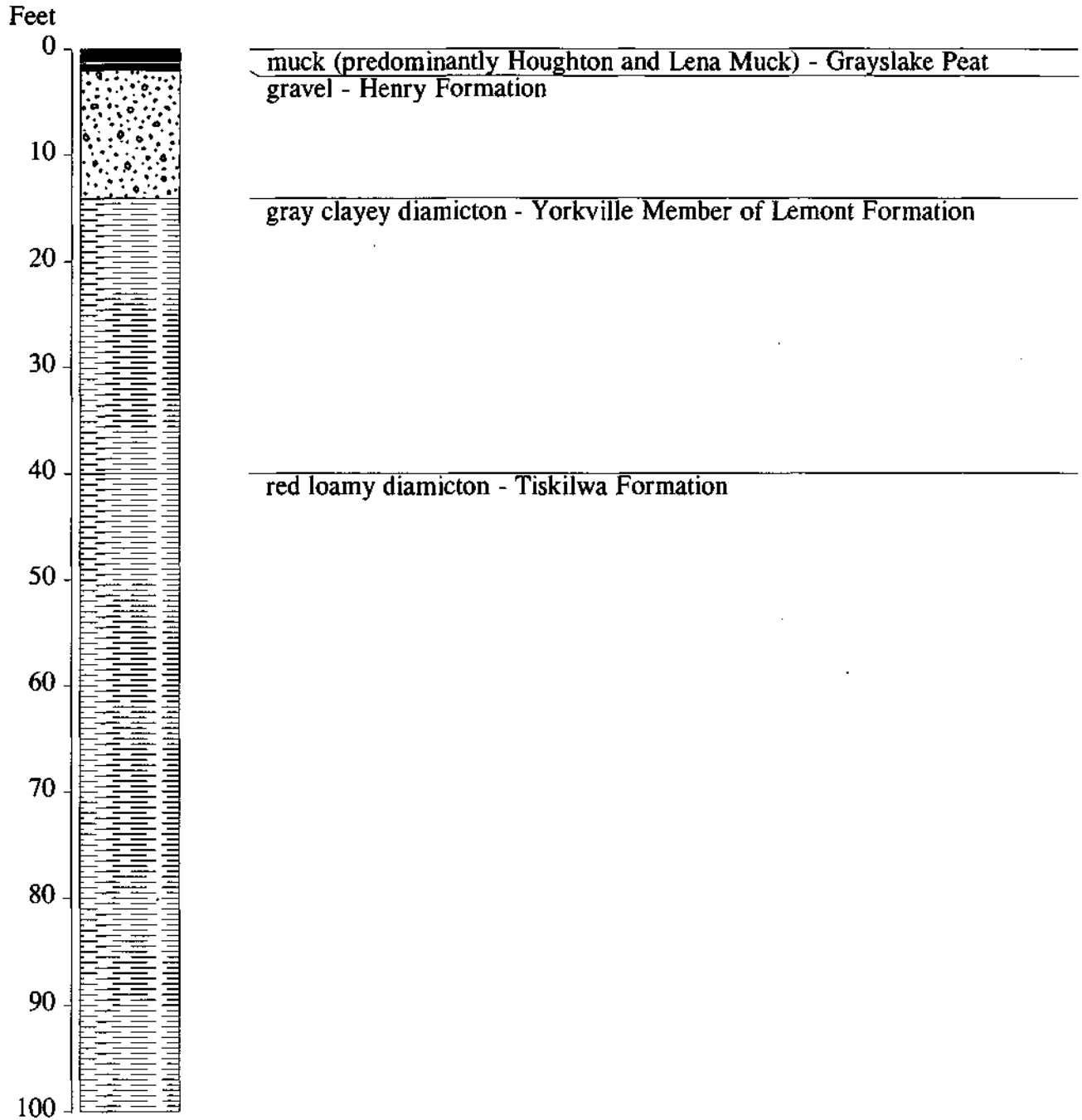
Potential problems exist due to a golf course, roads and residential development which are directly upgradient of the preserve. While sensitive geology is expected both on and off-site, there is no clear confirmation of this in the nature preserve file.

from surface water is moderate to high.

Potential problems exist due to a golf course, roads and residential development which are directly upgradient of the preserve.

Kishwaukee Fen Nature Preserve
McHenry County - 43N 7E Sections 10, 11, 14, 15
880

Stratigraphic Column based on log in Section 15: 900'N 1200'E NE, SE NW NE



Site #: 25 NPC #: 185 Site: Lake in the Hills Fen
County: McHenry Location: 17 43N 8E; 20 43N 8E; 21 43N 8E

Acres: 207.1 7.5 Map(s): Crystal Lake
Visit date: 06/20/96 Field crew: RAL HAW
Photos taken? Yes Number: 1
Photo description: R7P1: view to the northwest looking up
the valley feeding Lake in the Hills Fen

SAMPLE INFORMATION

Source: stream

Sample 1 is from a stream issuing from the
western most pond in Barbara Key Park (where flow
is indicated on the topo).

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	06/20/96	03:30 P	7.8	21.0	650	50

PAST ON-SITE LAND USE:

no dedication proposal in file; no known history; Near
the access to the northeast of the parking lot, camping
lots were probably set up as evidenced by multiple
electric service boxes.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	primarily to southeast, south, southwest and west of preserve; Homes are expected to be on city water and sewer. A sedimentation basin for development to the southeast drains along a line that goes westward (see photocopy in file of plat map with Outlot 'A' indicated).

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
surface impoundments		X	at sewage treatment plant southeast of nature preserve
mining		X	gravel mining to northeast; old pit to southeast adjacent to preserve; The existing pit farther southeast is being converted to residential property.
other		X	'airport' - to north of preserve
other		X	'industrial park' - to southeast; Businesses in the park are an automotive repair shop, a trucking company with tankers, Tru Green Lawn Care, construction contractors and a few others.
other		X	'sewage treatment/disposal facility' - Lake-in-the-Hills plant to southeast of preserve; Discharge from the plant enters Crystal Creek downstream of the preserve. Sewage disposal is noted on the topo near Crystal Creek upgradient from the preserve.

AGRICULTURAL

	on site	off site	location & description
row crops		X	west and northwest of nature preserve

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	within gravel pits
paved road		X	subdivision roads surrounding preserve; Pyott road on east, McHenry (Randall) Road on west of preserve
railway		X	east of Pyott Road

Is there potential impact from runoff? Yes.

While there is some distance between the nature preserve and the two major north-south roads, runoff (i.e., deicing agents) may reach the nature preserve through channelized surface water inputs; especially from McHenry Avenue Road (sketch on file).

RECREATIONAL

	on site	off site	location & description
outhouses		X	at Barbara Key Park
trail development	x		mown trail within nature preserve
parking		X	at Barbara Key Park

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Ground-water flow into the preserve occurs primarily in the north, northeast, east and west from areas of higher elevation. Smaller volumes of ground water enter from southeast and south.

surface water

Primary inputs are: outflow from the eastern pond in Barbara Key Park, east-west trending intermittent stream in south part of nature preserve, and creek entering nature preserve in the northwest. Intermittent streams issuing from uplands may also contribute surface water.

OUTPUTS

ground water

Regional and local discharge is towards the Fox River to the southeast.

surface water

Discharge occurs through a perennial stream exiting the preserve in the southeast.

ALTERATIONS

possible berming in southeast part of nature preserver;
some type of creek alterations (see file for 5/29/92
letter from Glen Kruse) downstream from nature preserver;
impacts unknown

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Primary soils present are Houghton, Millbrook, Lorenzo and Warsaw.

QUATERNARY DEPOSITS

About 200 feet of unconsolidated materials are present locally. The upper units include the Henry Formation and Tiskilwa Member. Many gravel pits are present near the preserve. Grayslake Peat/Henry Formation/Tiskilwa Member

BEDROCK

upper lithology: limestone

depth: 200+ feet

GEOMORPHOLOGY

Primary features are hills on either side of a northwest-southeast trending valley. Several kame-like features occur in the southwest part of the preserve.

TOPOGRAPHY

About 70 feet of relief is within the nature preserve. Slopes are generally toward the northeast and southwest.

Potential for Contamination:

of ground water is high.

of surface water is high.

Initial Assessment of Site Vulnerability:

from ground water is high.

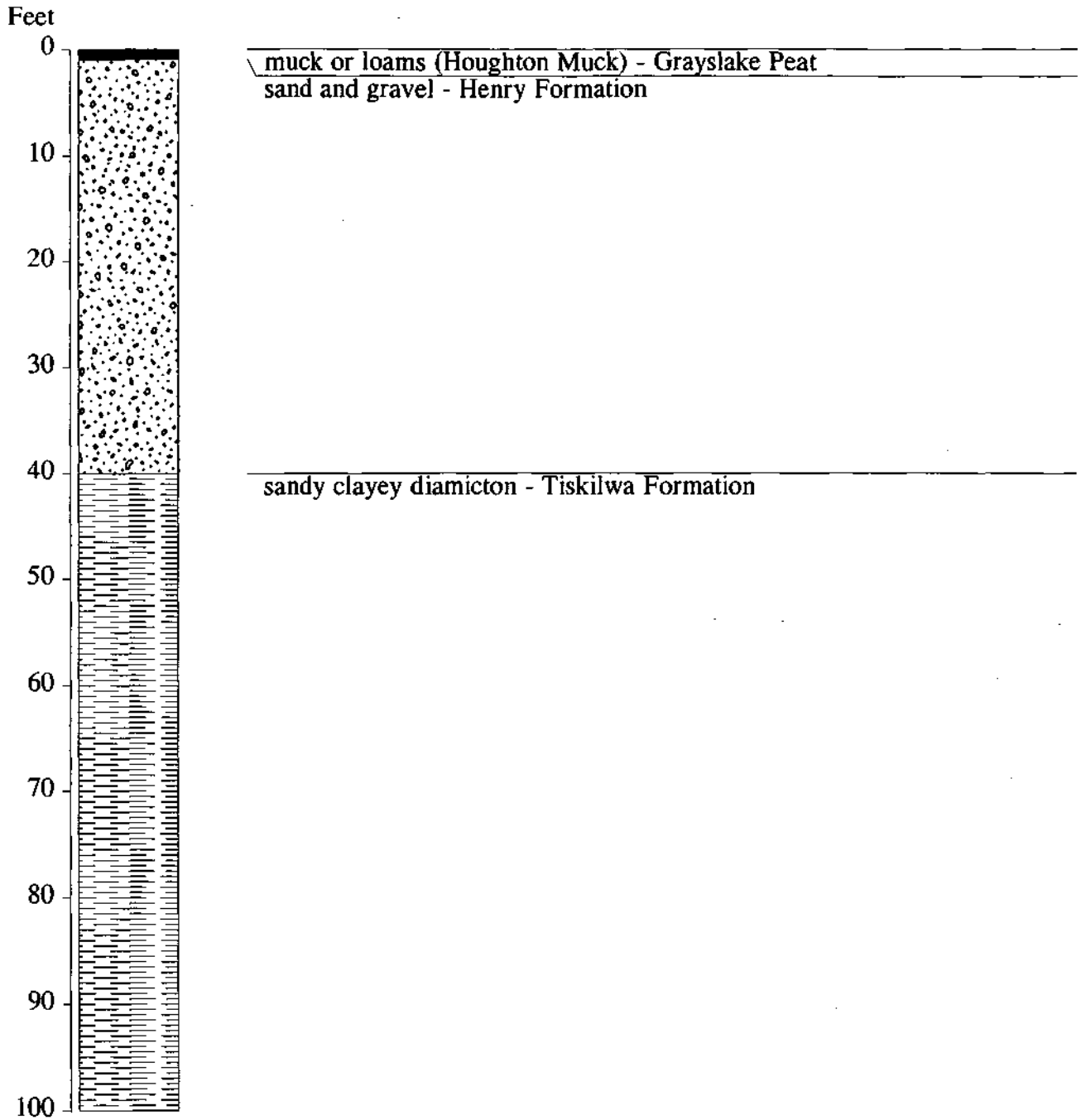
The geology is sensitive and there are expected impacts from gravel mining.

from surface water is high.

There is road runoff from Randall/McHenry Avenue Roads, possible sewage disposal upgradient of the preserve along Crystal Creek, and extensive residential and industrial development.

Lake in the Hills Fen Nature Preserve
McHenry County - 43N 8E Sections 17, 20, 21
820

Generalized Stratigraphic Column based on logs in Sections 17 and 21



Site #: 47 NPC #: 217 Site: Lake Renwick Heron Rookery
 County: Will Location: 14 36N 9E; 15 36N 9E
 Acres: 320.6 7.5 Map(s): Plainfield
 Visit date: 04/18/96 Field crew: RAL DCB
 Photos taken? Yes Number: 5
 Photo description: all pictures taken at sampling site;
 looking north toward heron rookery and
 looking east (noted on topo)

SAMPLE INFORMATION

Source: lake
 on southwest side of lake (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/18/96	11:30 A	9.0	15.6	140	21

PAST ON-SITE LAND USE:

Lake Renwick was a gravel pit from the 1800's - 1960.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	to north, west and south
domestic wells		X	to west; areas to north and south seem to be on city water/sewer
underground disposal		X	to west?; existence of old septic systems to north and south?

INDUSTRIAL/COMMERCIAL/MUNICIPAL			
	on site	off site	location & description
mining	X	X	Old City gravel pit & Chicago Gravel pit has flooded to form Lake Renwick. Three major pits in Section 14 & 15 are abandoned. Vulcan-Plainfield Pit is operational to the northwest of Lake Renwick.
stockpiles			
building			
materials	X	X	associated with gravel pits
graveyard/carcasses		X	to west
other	X		'drainage culvert' - A 6 inch diameter pipe from the pond at Boy Scout Park (to north of the preserve) drains into Lake Renwick area. An inter-agency agreement (c.1991) prohibits use of pesticides and fertilizers.
AGRICULTURAL			
	on site	off site	location & description
row crops		X	north, south and west of nature preserve

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road	X		in southeast at access point (old quarry entrance)
paved road		X	Renwick Road (south), Route 30 (southwest) subdivision roads (northwest), and Route 126 (north)
railway	X	X	to northeast (off-site); on-site spurs enter the preserve (abandoned?)

Is there potential impact from runoff? Yes.
 primarily from paved roads, but minor potential from gravel roads

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Expected ground-water flow is southerly or southeasterly. However, depending on influence of Dupage River, there may be some westerly flow. Ground water is about 15 feet below land surface except at the lake.

surface water

None were identified other than pond in boy scout park to northeast of the preserve. Lily Cache Creek borders the site on the southeast.

OUTPUTS

ground water

Primary outputs are upward migration through the quarry pit floor and southward off-site movement due to local gradients.

surface water

No streams or culverts were noted discharging from the site. Lake water may primarily move into the subsurface at the south end of the lake and eventually discharge in to Lily Cache Creek.

ALTERATIONS

Mining created Lake Renwick. Future work to widen Route 30 may allow additional runoff into Lake Renwick.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

The reclaimed gravel pit is surrounded by Warsaw and Lorenzo (sandy soils) and Troxel.

QUATERNARY DEPOSITS

Grayslake Peat/Henry Formation/bedrock

BEDROCK

upper lithology: limestone, dolomite, shale

depth: 30 - 45 feet

GEOMORPHOLOGY

The lake exists in an abandoned gravel pit in a glacial outwash plain. Total relief is about 30 feet from the bottom of the pit to the top of berms at the edge of preserve.

TOPOGRAPHY

Slope is to the southeast. Relief in section 15 appears to be 10-15 feet above the gravel pit edge.

Potential for Contamination:

of ground water is moderate to high.

Main concern is impacts of mining to the north.
of surface water is high.

Primary concern is construction along Route 30.

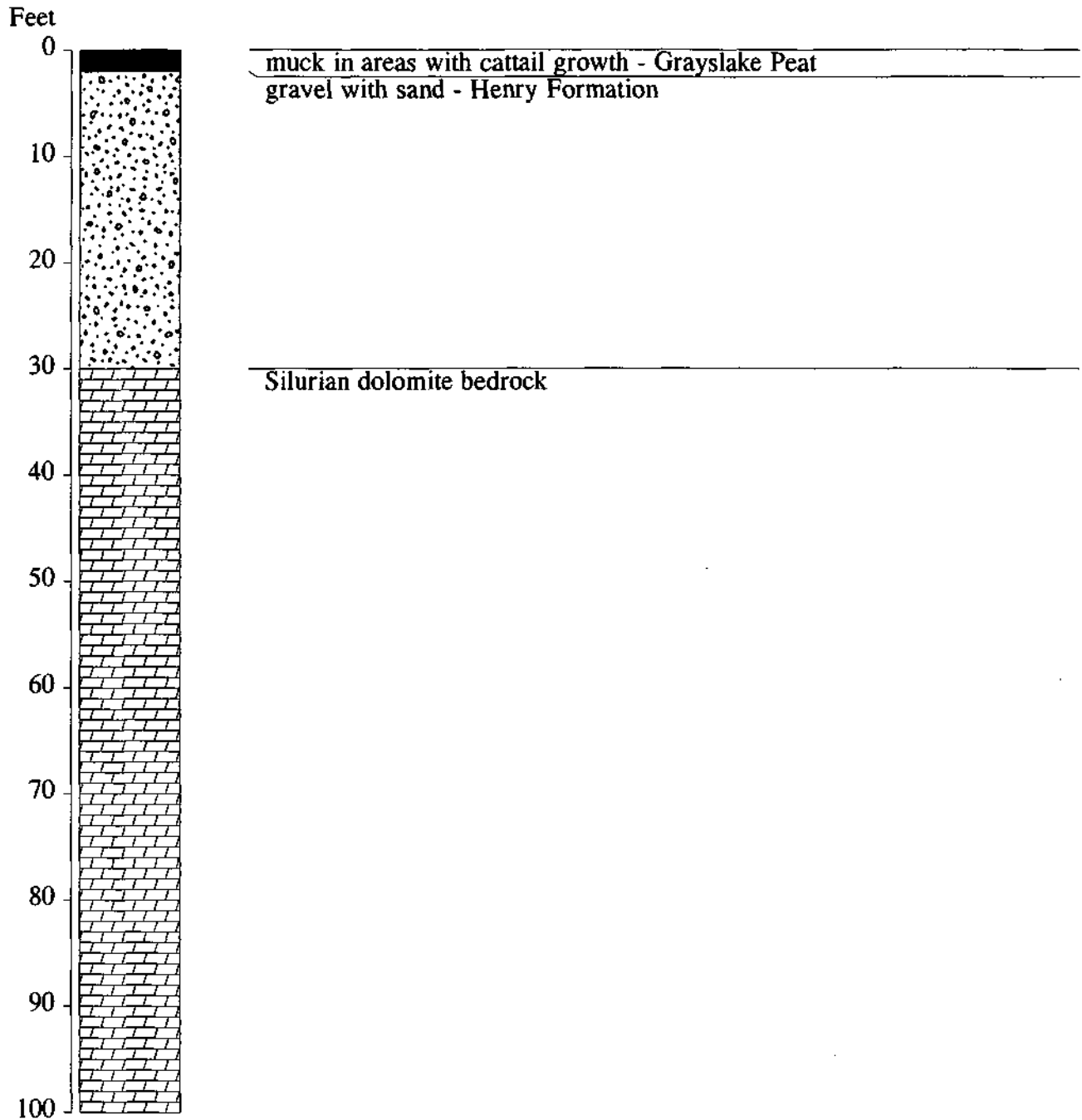
Initial Assessment of Site Vulnerability:
from ground water is moderate to high.

from surface water is moderate to high.

Additional Comments

Impacts of previous mining on lake quality are unknown.-

Lake Renwick Heron Rookery Nature Preserve
Will County - 36N 9E Section 14, 15
590
Generalized Stratigraphic Column based on local logs



Site #: 78 NPC #: 173 Site: La Rue Swamp
 County: Union Location: 28 11S 3W, (E 1/2)
 Acres: 140.0 7.5 Map(s): Wolf Lake
 Visit date: 02/28/96 Field crew: RCB MVM
 Photos taken? Yes Number: 1
 Photo description: at sample location

SAMPLE INFORMATION

Source: pond
 from a pond in a meander scar marsh/swamp (noted
 on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/28/96		7.5	8.8	110	90

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	to the west and downgradient

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (inferred septic system)		X	scattered residential areas to west and south

TRANSPORTATIONAL

	on site	off site	location & description
other	X	X	'service roads' - to the west and northeast

Is there potential impact from runoff? Yes.

Mimimal impacts are expected.

RECREATIONAL

	on site	off site	location & description
other		X	'campgrounds' - on the bedrock uplands to the south and west

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow direction is to the west toward Mississippi River and Running Lake Ditch. Seeps along the bedrock bluffs to the east (off-site) were noted during the field visit.

surface water

Inputs include: overland flow from bluffs and possible floodwater from Running Lake Ditch and the Mississippi River.

OUTPUTS

ground water

Discharge is expected to the south and west.

surface water

Flow may occur to Wolf Lake to the south, Running Lake Ditch to the west, or meander scar lake to the north.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, lacustrine

SOIL ASSOCIATION/SERIES

Jacob and Karnak soil associations are present
(floodplain alluvial soils).

QUATERNARY DEPOSITS

Grayslake Peat/Cahokia Alluvium/Henry Formation

BEDROCK

upper lithology: limestone, sandstone
supplemental description:

Kinkaid Limestone, Degonia Sandstone

depth: 140 feet

GEOMORPHOLOGY

wetland depressions with trees on the Upper Mississippi
River floodplain; An old meander scar with open water is
at the base of steep bedrock slopes with about 330 feet
of relief.

TOPOGRAPHY

Site is in depressions of an old meander scar with less
than 20 feet of relief on-site.

Potential for Contamination:

of ground water

of surface water

No sources were identified other than the
campgrounds.

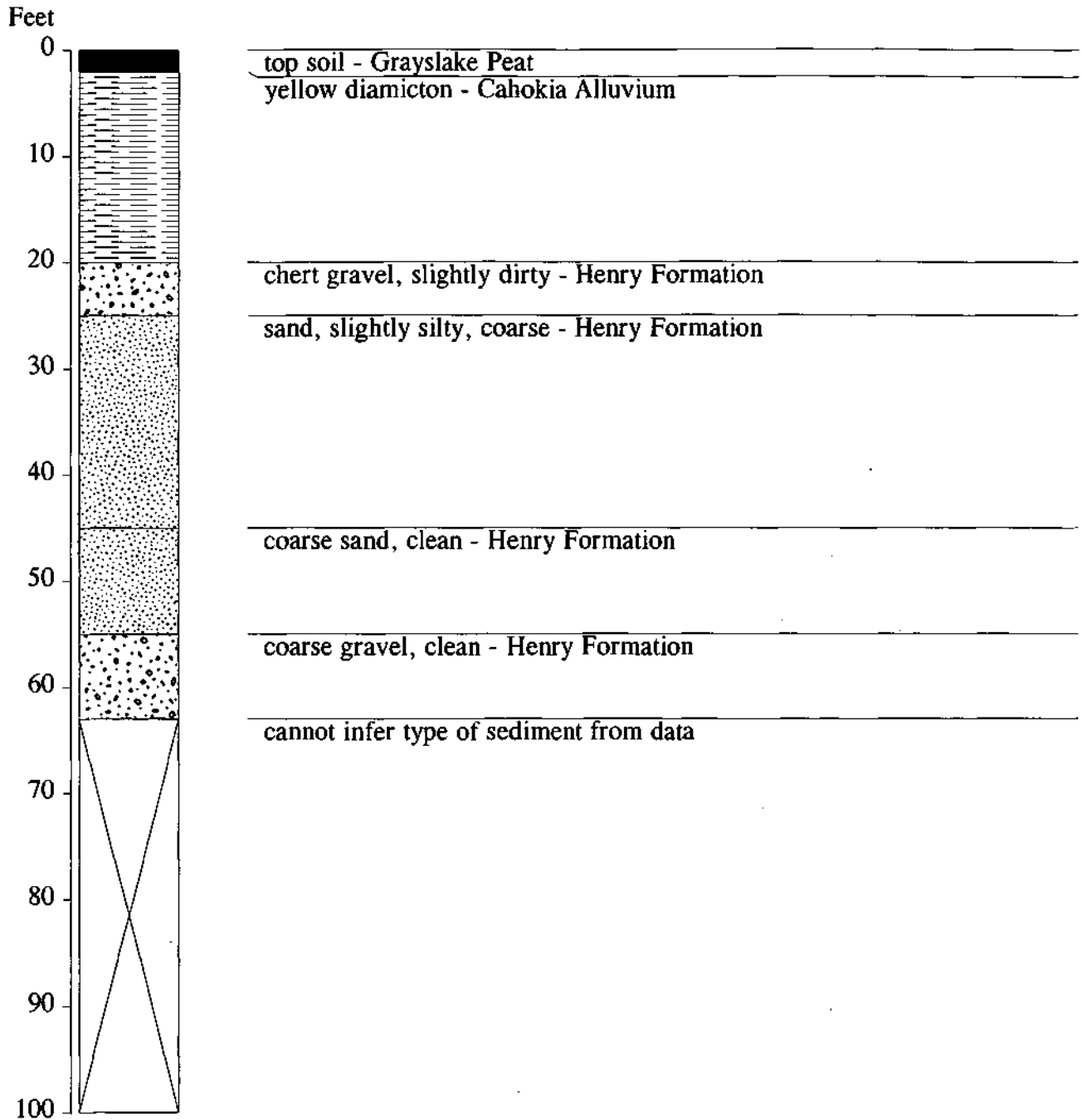
Initial Assessment of Site Vulnerability:

from ground water is low.

from surface water is low.

La Rue Swamp Nature Preserve
Union County - US 3W Section 28
350

Stratigraphic Column based on log in Section 21: 200'S 100'E, SE SE SE



Site #: 46 NPC #: 110 Site: Lockport Prairie
 County: Will Location: 22 36N 10E; 27 36N 10E; 28 36N 10E

Acres: 249.0 7.5 Map(s): Joliet
 Visit date: 04/18/96 Field crew: RAL DCB
 Photos taken? Yes Number: 2
 Photo description: noted on topo as R4P3-P4; taken at sample location

SAMPLE INFORMATION

Source: pond
 in the southeast part of Lockport Prairie North
 just north of Division Street (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/18/96	10:00 A	8.4	12.8	800	79

PAST ON-SITE LAND USE:

grazing in north part of preserve; dump site in south part of preserve; Some areas were leveed.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
landfill	X		Dumping in south part of preserve is noted in vegetational and plant community survey report (DeMarro, 1986).
mining		X	northwest of preserve (about 160 acre gravel pit)
stockpiles			
building materials		X	at gravel pit

building materials		X	concrete pipe to north of site at Delta Concrete Products
production wells		X	possibly at Stateville Prison and nearby cities
AGRICULTURAL			
	on site	off site	location & description
row crops		X	at Stateville Prison to west
pasture		X	at Stateville Prison

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road	X		quarrying roads; the walking trail on-site; access road in south previously used for dumping
paved road	X	X	Division Street (on-site in center of preserve) runs east-west; Highway 7 to north; Highway 53 to west
railway		X	borders west side of preserve

Is there potential impact from runoff? Yes.
from paved roads

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

dumping	location	in south part of preserve; apparently no longer active, but there is still debris
---------	----------	---

flood debris on floodplain near Des Plaines River

HYDROLOGY:

INPUTS

ground water

Ground water is shallow (less than 5 feet) in most areas of the preserve throughout the year because of the proximity to the Des Plaines River. Ground-water flow is estimated by topography as easterly to southerly. Upgradient areas could be either to the north or west of the preserve.

surface water

East to west ditches occur on the west side of the preserve. Flow is generally from west to east towards the Des Plaines River. The most developed ditch is in the south part of the south tract. Flow through the railroad box culverts is a substantial input.

OUTPUTS

ground water

Outputs include seeps and springs on the floodplain and near the base of the uplands to the west (southwest part of the north tract).

surface water

Ditches drain to the east into the Des Plaines River.

ALTERATIONS

1) Construction of Division Street - primary impact is impedance of flow from the springs to the north; 2) Ditching and drainage into preserve would increase potential for periods of high discharge directly into the preserve from areas to the west (e.g., marshy area to the north of Division Street and west of railroad tracks, uplands, etc.).

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

dominantly Romeo silt loam

QUATERNARY DEPOSITS

Grayslake Peat/Henry Formation or weathered Silurian bedrock

BEDROCK

upper lithology: limestone, dolomite, shale

depth: 2-15 feet

GEOMORPHOLOGY

Site is in the Des Plaines River Valley, which has a flat floodplain with little relief. Valley is bordered on west and east by eroded uplands. Uplands primarily of glacial materials with some significant sand and gravel deposits to the northwest.

TOPOGRAPHY

Total relief on the preserve is about 5 to 15 feet. Slope is generally to the east.

Potential for Contamination:

of ground water is moderate to high.

of surface water is moderate to high.

Runoff from Route 53 appears to be diverted through a drainageway in the southern portion of the preserve.

Initial Assessment of Site Vulnerability:

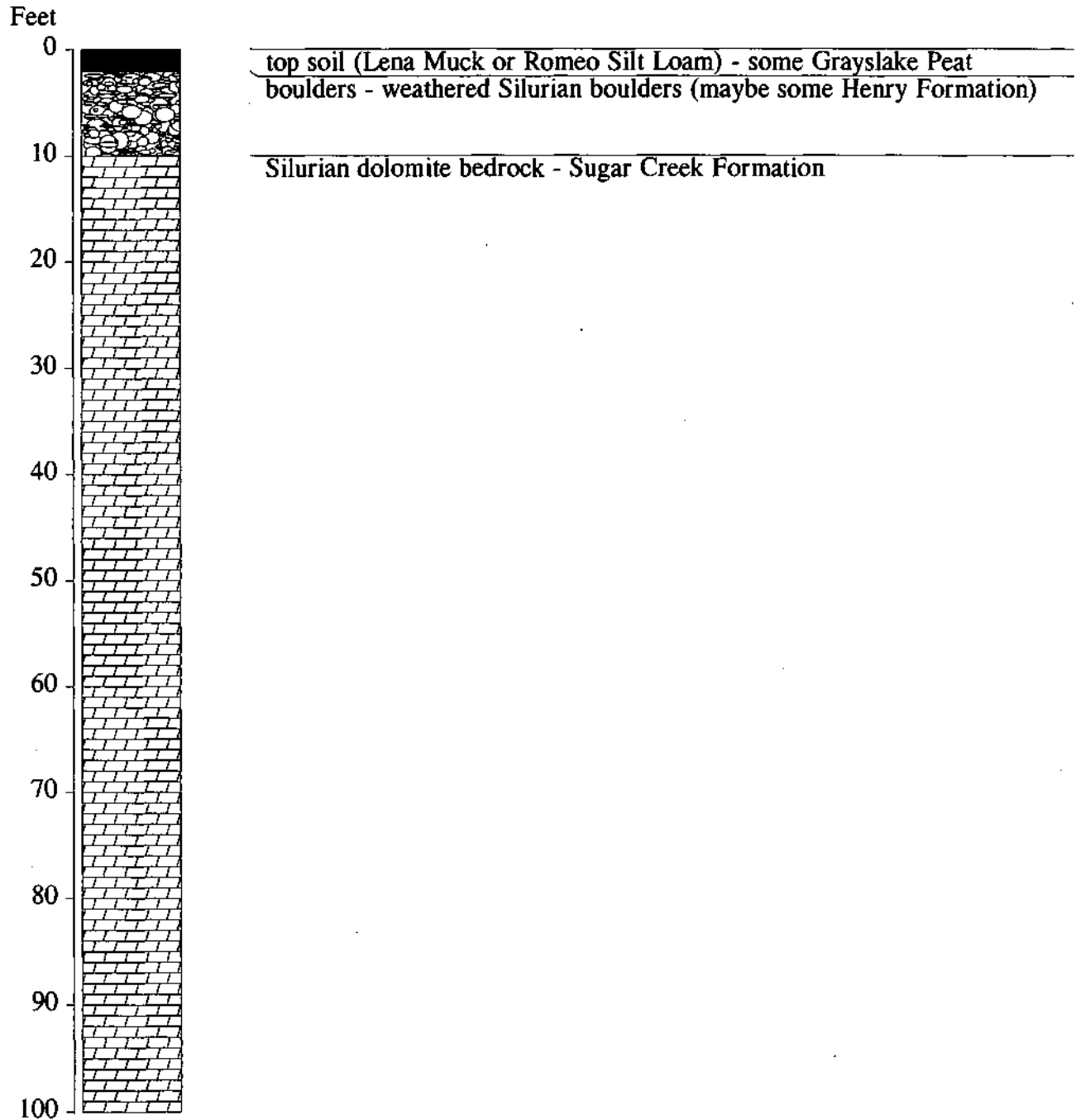
from ground water is moderate to high.

from surface water is moderate to high.

The primary concern is runoff from the highway.

Lockport Prairie Nature Preserve
Will County - 36N 10E Sections 22, 27, 28
565

Stratigraphic Column based on logs in Section 22 and 27



Site #: 44 NPC #: 188 Site: Long Run Seep
 County: Will Location: 2 36N 10E; 11 36N 10E
 Acres: 41.3 7.5 Map(s): Joliet, Romeoville
 Visit date: 04/17/96 Field crew: RAL DCB
 Photos taken? Yes Number: 4
 Photo description: R3 P25: taken at drain line (septic system?) outlet; R4 P00-P02: skunk cabbage and large seep area locations noted on topo

SAMPLE INFORMATION

Source: stream

Sample was taken from a spring run in the east central part of the preserve at the base of a slope (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/16/96	03:00 P	7.6	10.0		54

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	associated with houses on the uplands/upland slopes to the east of the preserve
domestic wells underground disposal		X	see 'lawns' above
		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
other		X	'oil refinery' - to southwest of preserve

other X 'constructed pond' -
to north of preserve
in old gravel pit

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	New Road (to the west) and Lamont Road (High Road?) to the east
dirt road	X		throughout the preserve
railway		X	to west of preserve

Is there potential impact from runoff? Yes.
primarily from paved roads into streams

RECREATIONAL

	on site	off site	location & description
other		X	'golf course' - located to north of preserve on 135th St.; upstream on Long Run Creek

ON-SITE MISCELLANEOUS

	location
dumping	at access point by northernmost bridge on Lamont Road; Debris is more from littering than from dumping.
flood debris	in lowlands associated with Long Run Creek and unnamed creek in south part of the preserve

HYDROLOGY:

INPUTS

ground water

Ground-water flow is generally to the west with some deviation near the streams. Ground water is at or near the land surface (within 0-5 feet) at the base of slopes in the preserve.

surface water

Surface water comes from Long Run Creek in the north and an unnamed stream to the south.

OUTPUTS

ground water

Outputs are seeps, springs on the west slope in the central part of the preserve, and discharge through stream beds.

surface water

Major discharges are through Long Run Creek and an unnamed stream to the south.

ALTERATIONS

ATV trails occur throughout the preserve. Some trails run just above areas where seeps/springs occur. This may divert or concentrate ground-water discharge.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Morley silt loam in uplands and bluffs; Lawson silt loam occurs along two streams, Lorenzo loam is in northwest part of the preserve, and Fox soils occur in the north.

QUATERNARY DEPOSITS

thin Henry Formation/Yorkville Member/Henry - Formation/diamicton/bedrock

BEDROCK

upper lithology: limestone, dolomite

depth: 1 - 88 feet

GEOMORPHOLOGY

Glacial deposits have been eroded by the Des Plaines River on the west to form uplands to the east of the preserve

TOPOGRAPHY

Site occurs in the Des Plaines River Valley and is from the floodplain to the top of the valley wall. Slopes are generally to the west. Total relief is about 60 feet.

Potential for Contamination:

of ground water is moderate to high.

of surface water is moderate.

Runoff from Lemont Road is likely.

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

Residences to the east of the preserve may have an impact.

from surface water is moderate.

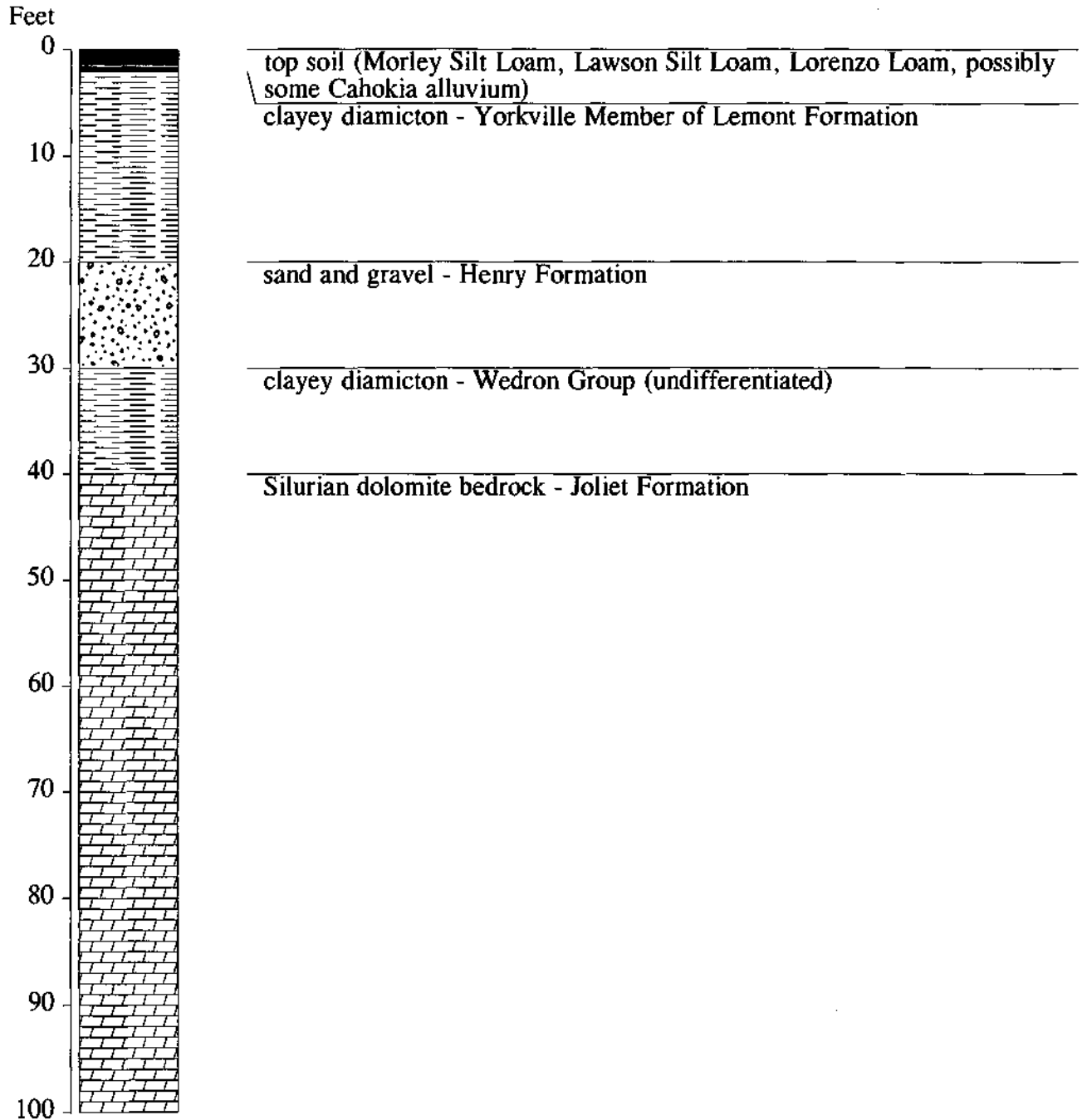
Primary concerns are development along the two creeks and runoff from Lemont Road.

Additional Comments

This preserve was difficult to classify. Seeps/springs are separate from streams that run through the nature preserve.

Long Run Seep Nature Preserve
Will Co. - 36N 10E Sec. 2, 11; 37N 10E Sec. 32, 33
650

Generalized Stratigraphic Column based on logs from the SE quadrant of Section 2



Site #: 7 NPC #: 91 Site: Lyons Prairie and Marsh
 County: Lake Location: 4 43N 9E
 Acres: 313.4 7.5 Map(s): Barrington
 Visit date: 06/19/96 Field crew: RAL HAW
 Photos taken? No

NO SAMPLES TAKEN

PAST ON-SITE LAND USE:

grazing in lowlands; Efforts taken to drain and till the sedge meadows failed. Buffers were in cultivation as recent as the 1970's. Hunting was done on properties now in the nature preserve and trails have overgrown, but hunting blinds still remain.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	to south of south parcel of preserve (off Three Oaks Rd.); some development north of Three Oaks Rd. and west of County Line Rd. (a.k.a. Hickory Grove Lane). The latter development is probably not directly upgradient from either parcel of the preserve.
domestic wells			
underground disposal		X	see 'lawns' above
		X	see 'lawns' above

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	southwest of nature preserve (northwest corner of intersection of County Line Rd. and Three Oaks Rd.)
livestock		X	horses southwest of south parcel off of Three Oaks Rd.
drainage wells/tile outlets/ditches	X	X	as described in past land uses, tiling and ditching was done to farm low-lying areas

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road	X	X	parking lot off of County Line Rd.; road just north of south parcel
paved road		X	Hickory Grove Lane/County Line Rd. (west) and Three Oaks Rd. (south)

Is there potential impact from runoff? Yes.
 The area with the most potential for runoff is in the southwest corner of north parcel of the preserve (sketch on file).

RECREATIONAL

	on site	off site	location & description
outhouses		X	at parking lot off of County Line Rd.
trail development	X		
parking		X	

ON-SITE MISCELLANEOUS

location

flood debris

HYDROLOGY:

INPUTS

ground water

Major influence is from the Fox River which enters the area from the northwest, flows east along the north boundary of the north parcel then southeast along the east edge of the north parcel. The ground-water flow directions in the lowlands are influenced by the elevation of the river. Topography suggests that the north parcel has ground-water input from the uplands to the south. The southern parcel has ground-water input from the same uplands which are positioned to the west.

surface water

The flow of the Fox River dominates the area; especially since a back water meander in the north parcel of the preserve is in direct connection with the river. No other obvious surface water inputs were seen. It is very possible that ditches and culverts are present.

OUTPUTS

ground water

discharge to the Fox River

surface water

ditches, culverts, natural channels leading to the Fox River; especially in the north parcel

ALTERATIONS

see 'Land Use - past on-site uses'

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

dominantly Houghton Muck (103), Pella silty clay loam(153), Harpster silty clay loam (67) and Mundelein(442A), Zurich(696A&B) and Wauconda(697) silt loams; see dedication proposal for additional comments

QUATERNARY DEPOSITS

Surficial geology is composed of Grayslake Peat and outwash of the Mackinaw and Wasco Members of the Henry Formation. Geology is highly variable because of the proximity to the Fox River.

BEDROCK

upper lithology: limestone, dolomite

depth: 134 - 157 feet

GEOMORPHOLOGY

Abandoned meander/backwater is present in north parcel. River terraces in both parcels. Hill to west of south parcel and south of north parcel is a kamic deposit or remnant of larger scale outwash deposit.

TOPOGRAPHY

The elevation of the Fox River is about 731 feet and the elevation at the top of hill is about 840 (about 110 feet of local relief). North parcel is primarily flat since it is on the Fox River floodplain (about 15 feet relief). South parcel is also relatively flat.

Potential for Contamination:

of ground water is low to moderate.

of surface water is high.

Initial Assessment of Site Vulnerability:

from ground water is moderate.

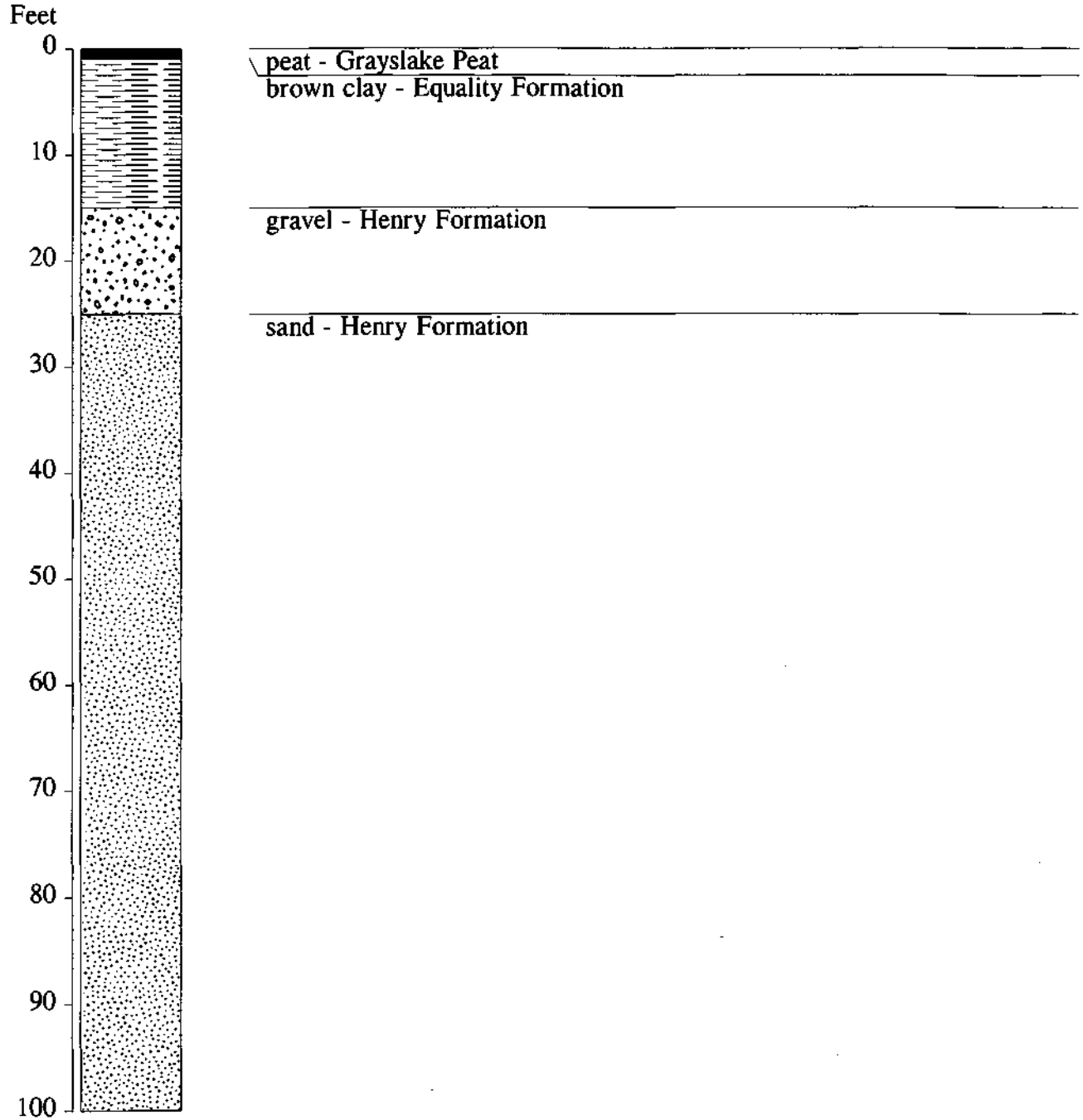
Geology is sensitive. There are no obvious sources directly upgradient of the site.

from surface water is high.

The Fox River is the primary input and sedimentation is noted as a major problem.

Lyons Prairie and Marsh Nature Preserve
Lake County - 43N 9E Section 4
735

Stratigraphic Column based on log in Section 4: NW NE NE



Site #: 52 NPC #: 155 Site: Maramech Woods
 County: Kendall Location: 27 37N 6E; 33 37N 6E; 34 37N 6E

Acres: 85.7 7.5 Map(s): Piano
 Visit date: 04/18/96 Field crew: RAL DCB
 Photos taken? Yes Number: 4
 Photo description: R4P8: seep discharge in an actively eroding channel; R4P9: channel bank showing dry seep/discharge 'holes' near unit contact; R4P10: marsh margiold; R4P11: sample site

SAMPLE INFORMATION

Source: other

'brush swamp' - northwest portion of preserve in abandoned stream valley (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/18/96	4:00 P	7.4	17.2	220	32

PAST ON-SITE LAND USE:

grazing and timbering; pine plantation in south

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
domestic wells		X	a few houses to the north on Griswold Springs Road; one home south of Maramech Hill
underground disposal		X	see 'lawns' above

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	to south(?) and north

pasture		X	on floodplain south of Maramech Hill; on uplands in north
tree farms	X		abandoned pine plantation in south
storage tanks		X	possibly at residences noted
livestock		X	cattle grazing south of Maramech Hill
surface impoundments/feed lots		X	possibly south of Maramech Hill

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	north-south road just east of Maramech Hill
paved road		X	Ben Street (?)/Fox River Road (to east); Griswold Springs road (to north); Millhurst Road (to south)

Is there potential impact from runoff? Yes.
from Fox River Road

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Southeasterly flow is expected from the south facing slope in the north part of the preserve. Northwesterly flow enters the preserve from the north facing slope of Maramech Hill.

surface water

Inputs include: 1)roadside ditches on Fox River Road/Ben Street which enter the preserve in northeast, 2)small springs and seeps on south facing slope in north part of the preserve, and 3)possibly springs and seeps on north slope at Maramech Hill.

OUTPUTS

ground water

Ground-water outputs include springs and seeps noted as surface water inputs above and discharge to the shrub swamp in northeast. Southerly flow may occur to Little Rock Creek.

surface water

One stream was seen flowing from southeast corner of the preserve toward Big Rock Creek. Another stream may discharge from the southwest part of the preserve towards Little Rock Creek.

ALTERATIONS

none other than historical land uses; impacts unknown

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Landes fine sandy loam, Hennepin silt loam, Camden silt loam

QUATERNARY DEPOSITS

Batestown Diamicton/thin Henry Formation/Galena Dolomite

BEDROCK

upper lithology: limestone, dolomite
supplemental description:

Depth to bedrock in logs varies with the well's topographic position.

depth: 10 - 100 feet

GEOMORPHOLOGY

The nature preserve includes an abandoned stream valley to the north of Maramech Hill. Two stream channels extend to the north of the nature preserve proper and are in buffer areas. Maramech Hill to the south may be comprised of glacial materials.

TOPOGRAPHY

Hills to north and south of the preserve slope towards an abandoned stream valley that runs east-west through the preserve. About 70 feet total relief is within the preserve.

Potential for Contamination:

of ground water

Agricultural fields are upgradient, but the geology is not particularly sensitive.

of surface water

Potential sources include: agricultural fields upgradient, Fox River Road/Ben Street drainage into the site, and grazing south of site.

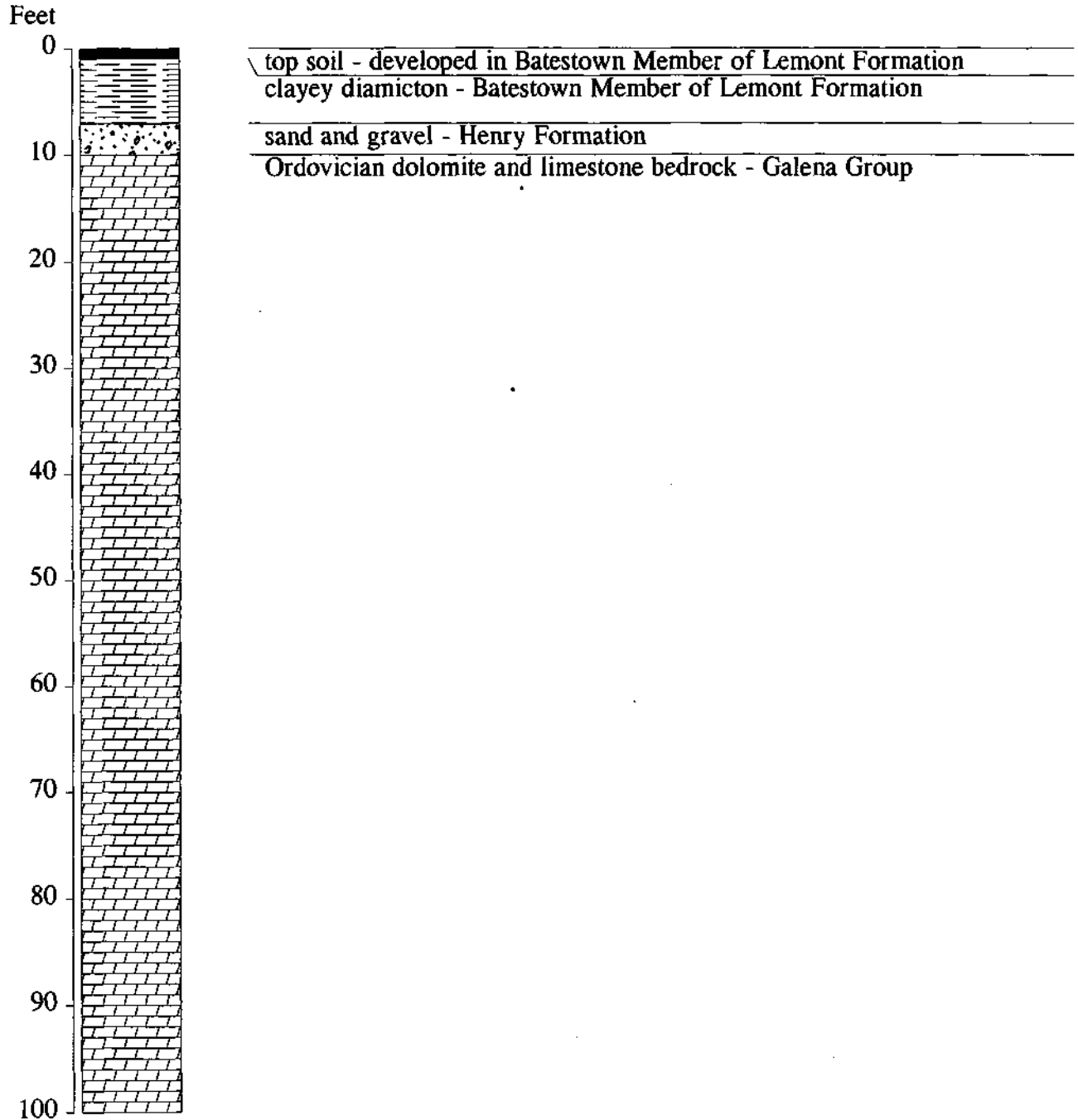
Initial Assessment of Site Vulnerability:

from ground water is moderate.

from surface water is moderate to high.

Maramech Woods Nature Preserve
Kendall County - 37N 6E Sections 27, 33, 34
600

Stratigraphic Column based on log in Section 34:SE SE NW



Site #: 83 NPC #: 84 Site: Massac Forest
County: Massac Location: 5 16S 5E; 8 16S 5E; 9 16S 5E

Acres: 267.2 7.5 Map(s): Metropolis IL-KY
Visit date: 02/27/96 Field crew: RCB MVM
Photos taken? Yes Number: 2 .
Photo description: locations noted on the topo

SAMPLE INFORMATION

Source: pond

on the floodplain of Sevenmile Creek and the Ohio
River (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/27/96		7.1	20.2	260	108

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
domestic wells		X	northeast of site along north-south road 1/2 mile east of I-24

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road	X	X	park service roads, I-24 to the west, and Route 45 to the north

Is there potential impact from runoff? Yes.

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

location
flood debris Considerable flood debris was near the wetland ponds (propane tank, tires, plastic jugs, etc.).

HYDROLOGY:

INPUTS

ground water

A perched water table and seeps occur in old meander scars. Flow is from north to south toward the Ohio River.

surface water

Potential for considerable input during Ohio River flooding. Fourmile/Sevenmile Creek enters the site in the southeast.

OUTPUTS

ground water

Local discharge is expected to go to the Ohio River.

surface water

Seepage may occur on the south (downgradient) end of the site near Sevenmile Creek. Intermittent drainage may occur to the west. Sevenmile Creek discharges to the Ohio River.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial

SOIL ASSOCIATION/SERIES

The Ginat-Weinbach-Sciotoville Association is present.

QUATERNARY DEPOSITS

Cahokia Alluvium/Equality Formation

BEDROCK

upper lithology: shale

supplemental description:

Mississippian Shales

depth: 50 feet

GEOMORPHOLOGY

Sevenmile Creek/Ohio River floodplain is on a low terrace at about 320 feet elevation. The river is at an elevation of 302 feet. Wetlands occur in a meander scar along Sevenmile Creek.

TOPOGRAPHY

generally flat; Up to about 40 feet of relief occurs on-site in the southeast corner along Fourmile/Sevenmile Creek.

Potential for Contamination:

of ground water

see 'Additional Comments'

of surface water

see 'Additional Comments'

Initial Assessment of Site Vulnerability:

from ground water is low.

Ground-water vulnerability is low due to minimal flow through clays.

from surface water is moderate to high.

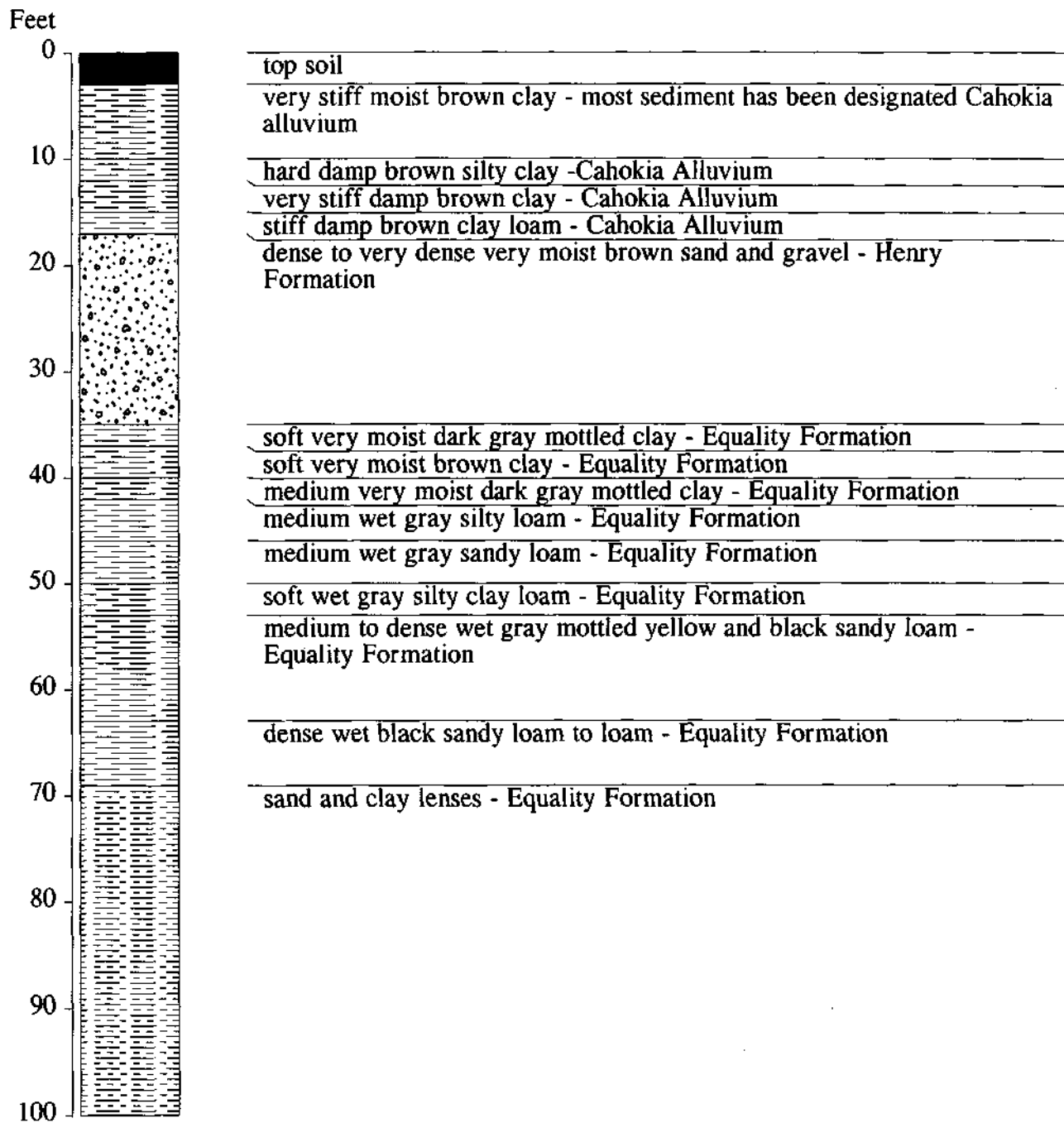
There is obvious susceptibility to flooding on a frequent basis.

Additional Comments

Potential problems include: 1) considerable sediment deposition on-site 2) considerable flood debris throughout area, and 3) Ohio River floodwater.

Massac Forest Nature Preserve
 Massac County - 16S 5E Sections 4,5,8,9
 340

Stratigraphic Column based on Illinois Division of Highways log in Section 8: SW
 SW NE, FAI 24



Site #: 68 NPC #: 131 Site: Matanzas Prairie
 County: Mason Location: 4 20N 9W, (NE)
 Acres: 27.6 7.5 Map(s): Kilbourne
 Visit date: 03/01/96 Field crew: RCB MVM
 Photos taken? Yes Number: 2
 Photo description: location noted on topo

SAMPLE INFORMATION

Source: pond

formed from a drainage ditch connected to the
 marsh; Sample 1 may have been just off site to
 the southwest.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	03/01/96		7.8	1.9	230	

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
other			'irrigation' - on the south side and farther away to the east; Land use to the north and northeast would have the most affect on the site.

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (inferred septic system)		X	few farmsteads to the east along north part of the preserve

TRANSPORTATIONAL

	on site	off site	location & description
other		X	corrugated pipe draining county road 1100 North into the preserve

Is there potential impact from runoff? Yes.
from county road 1100 North

RECREATIONAL

	on site	off site	location & description
other		X	'golf course' - west-southwest of site and probably downgradient

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow direction depends on local gradients and is generally to the west or southwest toward the Illinois River. The recharge area for the site includes sand and gravel surrounding the site, but would dominantly be to the northeast and east. The water table is shallow (less than 1 foot).

surface water

Primary inputs are overland flow from the northeast and flow in drainage ditches.

OUTPUTS

ground water

Seepage occurs in the wetland and is then directed toward the Illinois River.

surface water

Two ditches exit the site: one to the south/southwest and one to the northwest.

ALTERATIONS

Ditches through the site increase off-site drainage.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Sparta, Gilford, and Udolpho soils are present (all sandy).

QUATERNARY DEPOSITS

Henry Formation (dune sand)/Henry Formation (coarse sand with gravel)

BEDROCK

upper lithology: limestone, shale
supplemental description:

Mississippian Valmeyeran Series

depth: 150 feet

GEOMORPHOLOGY

Local features include dunes on a terrace within the Illinois River Valley.

TOPOGRAPHY

flat (less than 15 feet of relief)

Potential for Contamination:

of ground water

from agricultural land uses (e.g., application of chemicals) to the north and east of site

of surface water

from agricultural uses (e.g., chemigation) to the south and southeast of site

Initial Assessment of Site Vulnerability:
from ground water is low to moderate.

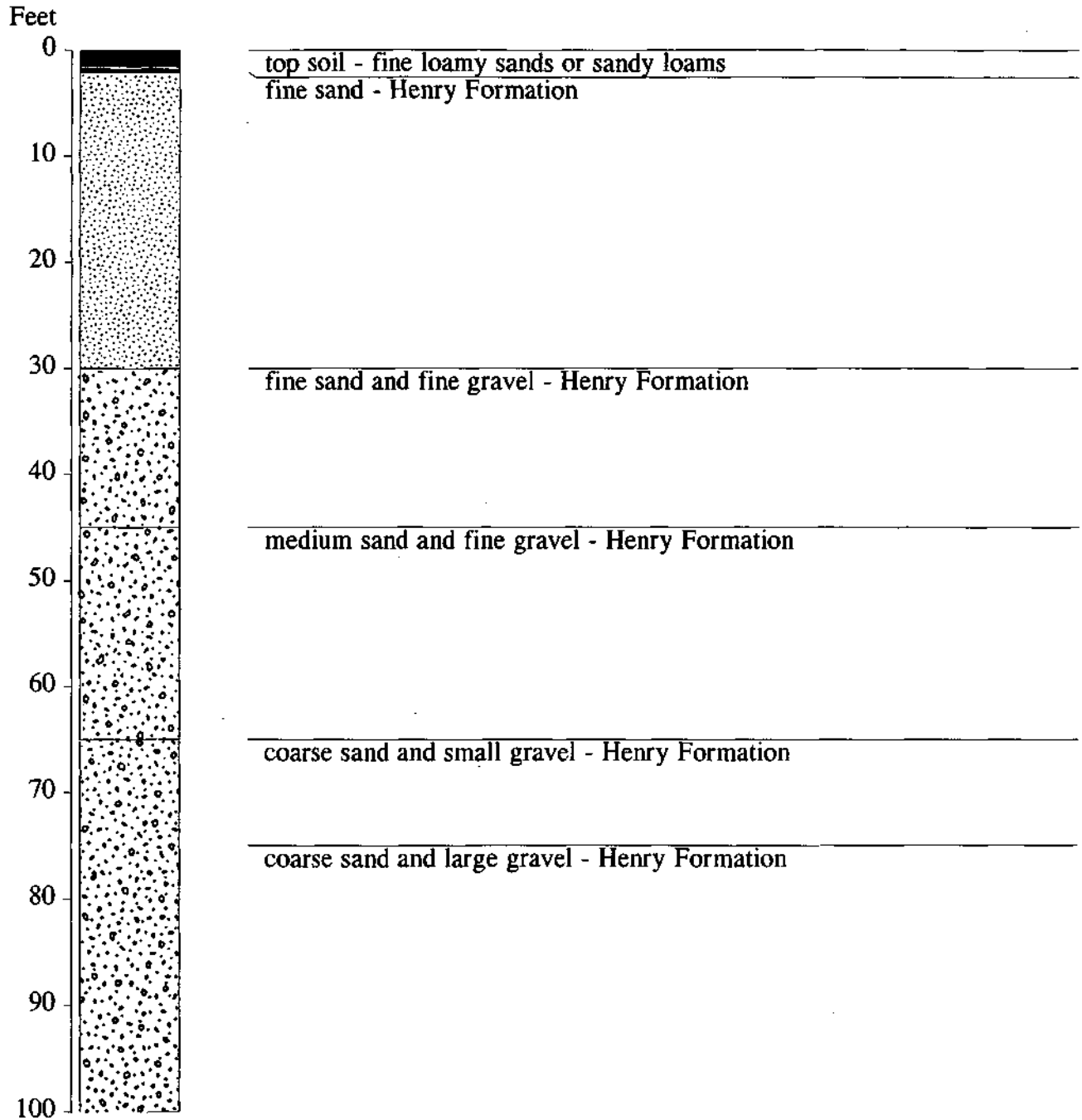
from surface water is low to moderate.

Additional Comments

Both ground-water and surface-water ranking may be lower if no over-application or significant migration of agricultural chemicals occurs in areas surrounding the site.

Matanzas Prairie Nature Preserve
Mason County - 20N 9W Section 4
460

Stratigraphic Column based on log in Section 34: 660'N 660'E SW/c, SW SW SW



Site #: 81 NPC #: 20 Site: Mermet Swamp
 County: Massac Location: 1 15S 3E, (NE)
 Acres: 43.0 7.5 Map(s): Joppa
 Visit date: 02/27/96 Field crew: RCB MVM
 Photos taken? No

SAMPLE INFORMATION

Source: pond

The large wetland with cypress is dry. This is unusual because of the present season. Sample was taken in the northwest part of the preserve (noted on topo).

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/27/96		7.8	20.3	230	89

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	park service road to the north and Route 45 to the east
railway		X	to the east and west

Is there potential impact from runoff? Yes.
 from park service road, Route 45 and the railroad

RECREATIONAL

	on site	off site	location & description
other	X	X	'conservation area' - Mermet Lake State Conservation Area is primarily to the west and northwest

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Ground-water flow is expected to be toward the northeast to the Cache Valley.

surface water

Mermet Lake is to the north. A drainage ditch runs along the west border of the site.

OUTPUTS

ground water

Discharge probably occurs into Tucker Ditch as well as by flow off-site to the north.

surface water

Primary drainage occurs through Tucker Ditch to the Cache Valley.

ALTERATIONS

ditching

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial

SOIL ASSOCIATION/SERIES

Ginat, Weinbach, and Sciotoville soils are present.

QUATERNARY DEPOSITS

Cahokia Alluvium/Equality Formation/Henry Formation

BEDROCK

upper lithology: limestone, dolomite
supplemental description:

Pennsylvanian Limestone

depth: 90 feet

GEOMORPHOLOGY

The site seems to be on or near a high terrace in the
Cache River Valley.

TOPOGRAPHY

flat; with a maximum of 40 feet of relief on-site

Potential for Contamination:

of ground water

see 'Additional Comments' below

of surface water

see 'Additional Comments' below

Initial Assessment of Site Vulnerability:

from ground water is low.

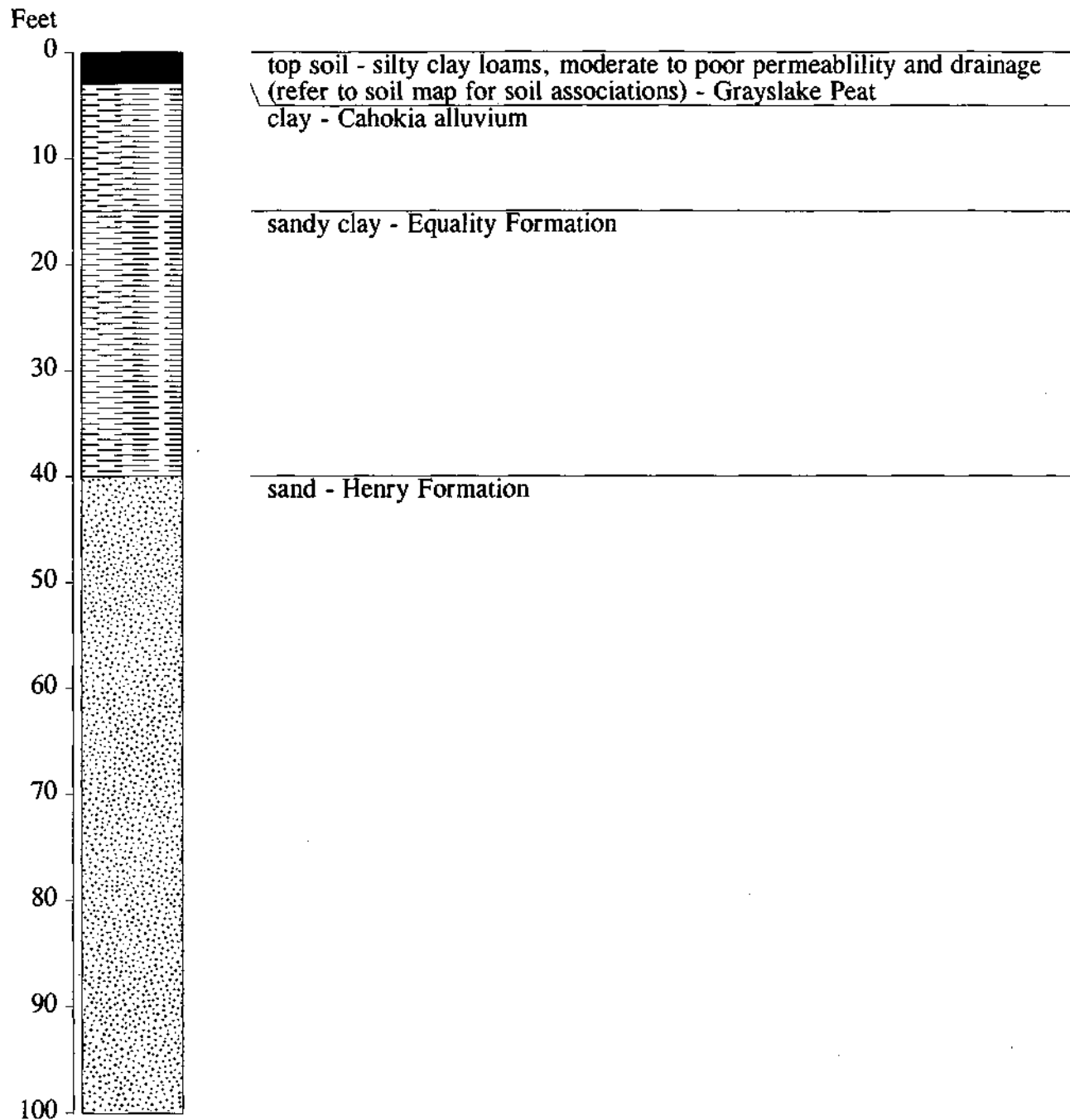
from surface water is moderate.

Additional Comments

Potential sources for both surface and ground water
include the railroad (west and more importantly to the
east) and Highway 45 east of the site. Few residences are
present near the site.

Mermet Swamp Nature Preserve
Massac County - 15S 3E Section 1
340

Generalized Stratigraphic Column based on logs in Section 1



Site #: 75 NPC #: 184 Site: Miller Shrub Swamp
 County: Marion Location: 36 1N 4E, (NW)
 Acres: 35.7 7.5 Map(s): Shields
 Visit date: 02/26/96 Field crew: RCB MVM
 Photos taken? Yes Number: 4
 Photo description: four frame panorama clockwise from the
 north (noted on topo)

SAMPLE INFORMATION

Source: pond

from a ground-water discharge pond (depressional pond) on the floodplain of the Skillet Fork; pH readings are very acidic for a marsh wetland.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/26/96		4.7	22.3	360	117

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	to the southwest
other		X	Old agricultural fields (greater than one year old) are to the north and are separated from the site by a forested slope.

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	service road about 1/8 mile west of wetland depression

Is there potential impact from runoff? No.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Ground-water discharges to the site from upland slopes. The wetland areas are very shallow and it seems they would be dry in the summer. Ground near the base of the slope to the north of the depression pond is damp.

surface water

There appears to be no surface-water inputs except perhaps Skillet Fork during flooding events. Some overland runoff is expected. One dry small rivulet with steep upper nickpoint indicates seep flow occurs.

OUTPUTS

ground water

no apparent outlets; Flow off-site is probably due to the local gradients to the south.

surface water

no apparent outlets

GEOLOGY:

SOIL ASSOCIATION/SERIES

Haymond - Petrolia - Karnak and Ava - Bluford - Wynoose soil associations are present. Soils are derived from clays (old survey).

QUATERNARY DEPOSITS

The current environment is a wet floodplain forest. Deposits include: thin Cahokia Alluvium/Vandalia Diamicton.

BEDROCK

upper lithology: limestone, shale
supplemental description:

Superposition of the glacial deposits over the shale may be responsible for ground-water discharge. The Mattoon Formation is comprised of limestone, shale, coal beds and sandstone. The Bond Formation is limestone with calcareous shales.

depth: 25 feet

GEOMORPHOLOGY

Crescent shaped 'bedrock' uplands surround the floodplain wetlands which are also crescent shaped as indicated on the topo. Wooded steep forested uplands occur to the north. Low swampy areas occur to the south and southwest.

TOPOGRAPHY

Total relief on-site is up to 40 feet.

Potential for Contamination:

of ground water

Few sources were noted.

of surface water

Few sources were noted.

Initial Assessment of Site Vulnerability:

from ground water is very low.

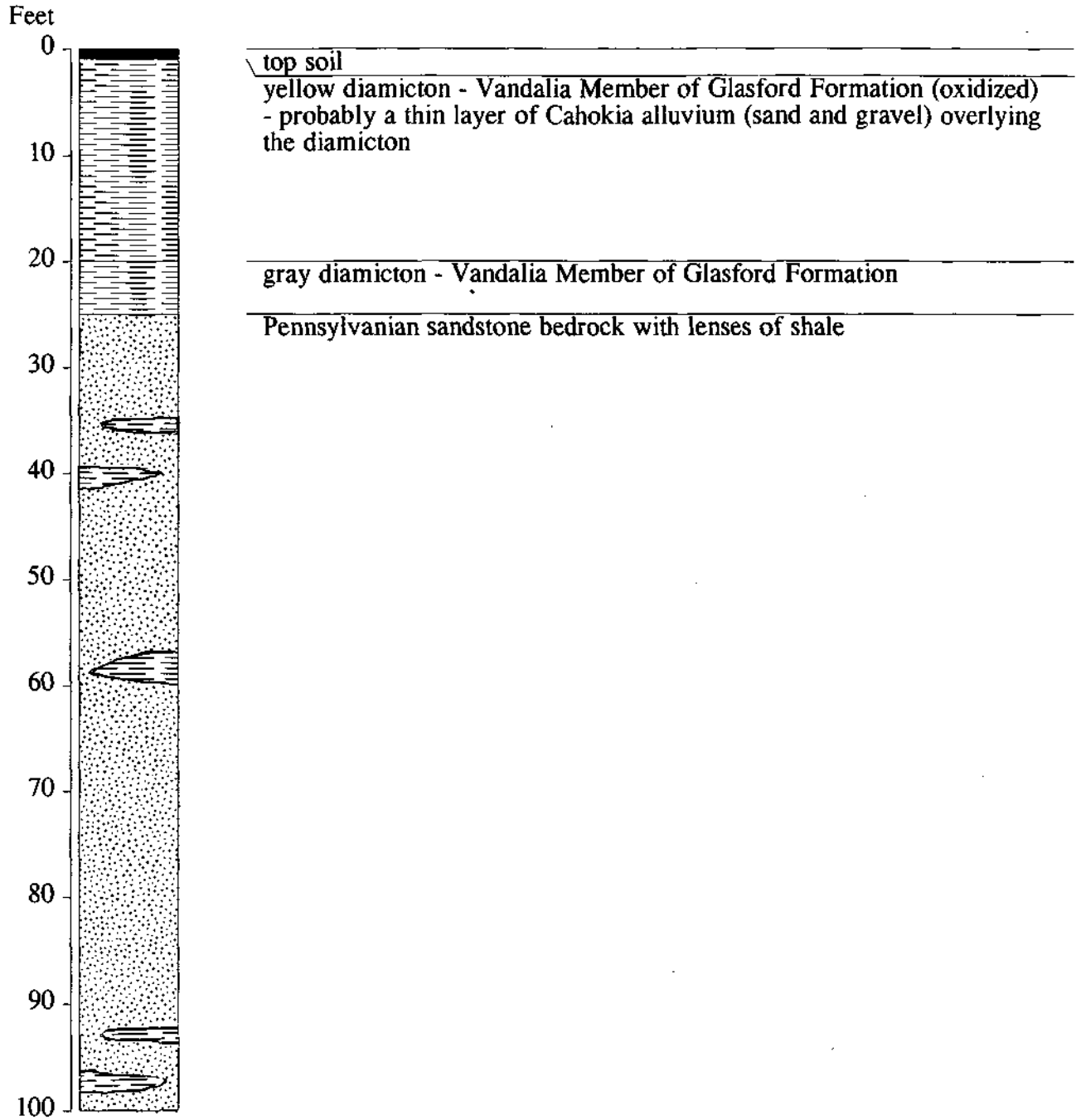
from surface water is very low.

Additional Comments

No potential sources were noted during the field visit. pH of water sample seemed too low for a scrub/shrub marsh-type wetland.

Miller Shrub Swamp Nature Preserve
Marion County - 1N 4E Section 36
450

Generalized Stratigraphic Column based on nearest logs



Site #: 61 NPC #: 23 Site: Miller-Anderson Woods
County: Bureau and Putnam Location: 36 15N 9E; 6 14N 9E

Acres: 340.1 7.5 Map(s): Putnam
Visit date: 04/09/96 Field crew: RAL SCM
Photos taken? Yes Number: 13
Photo description: headward erosion at seep under old Route
29; sampling location; pit toilets;
abandoned house with gas tank in front
yard; debris along old Route 29; Some
locations are noted on the topo.

SAMPLE INFORMATION

Source: stream
from spring discharge south and east of parking
lot; on west side of pond in the south part of
the preserve (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/09/96		7.2	9.5	800	125

PAST ON-SITE LAND USE:

Some portions of the preserve may have been subject to
grazing, drainage control, construction (associated with
old Route 29), foresting, and row crop activities.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
above ground disposal/dumping	X		'dumping' - one car gas tank, one fuel oil tank by abandoned house, and other debris mostly along old Route 29

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
pipelines	X		A gas pipeline with a general north-south trend skirts the east edge of the preserve. It is coincident with old Route 29 for at least part of this distance.

AGRICULTURAL

	on site	off site	location & description
row crops		X	in uplands
pasture		X	in uplands
storage tanks		X	possible buried tanks at adjoining farmsteads in uplands
livestock		X	cattle in uplands
drainage wells/tile outlets/ditches			possible tile drainage associated with row cropping; However, no drain intakes were noted in the uplands.

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (inferred septic system)	X	X	at farmsteads and possibly at the abandoned house on-site

TRANSPORTATIONAL

	on site	off site	location & description
gravel road	X	X	in uplands south and west of nature preserve; A gravel road also provides access to trailhead parking lot and Old Route 29.
paved road	X		in north half on the preserve; Old 29 runs through the preserve. New 29 runs along the east margin of the preserve.

Is there potential impact from runoff? Yes.

Runoff from new Route 29 (paved) might impact ponds and associated plant communities along the east edge of the preserve.

RECREATIONAL

	on site	off site	location & description
outhouses	X		by parking lot at trail head
trail development	X		
parking	X		

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Regional ground-water flow is from the west in sand and gravel deposits with a top elevation of about 480-500 feet MSL.

surface water

Runoff is conducted through the east-west trending stream valleys on the bluff edge.

OUTPUTS

ground water

Seeps/springs are fed by sand and gravel at 480-500 feet MSL. One major spring was noted.

surface water

Ponds/streams (fed by seeps/springs and runoff) flow eastward, but are diverted southward by the new Route 29. Culverts conduct water under Route 29 into floodplain to east.

ALTERATIONS

Berms were constructed to control flow from one major spring. This resulted in flooding of a lowland forest, causing tree kill. The roadbed of old 29 is constructed at the head of the noted spring. This spring, in fact, currently issues from beneath the roadbed of old 29. Headward erosion at 2 seep/spring sites (including the major one) was observed causing undercutting of the old 29 roadbed, including collapse of the roadbed at one site. The roadbed of new 29 dams flow from seeps/springs, resulting in ponding and diversion of flow to the south.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Fayette, Orthents complex and Hennepin soils are present.

QUATERNARY DEPOSITS

Grayslake Peat/Batestown Till/Glasford Formation

BEDROCK

upper lithology: shale

depth: 70 - 220 feet

GEOMORPHOLOGY

Site is transected by a dissected bluff edge marking the boundary between the alluvial valley of the modern Illinois River and the glaciated uplands to the west.

TOPOGRAPHY

About 200 feet of relief is on-site with steep slopes occurring along the bluff edge.

Potential for Contamination:

of ground water

The geology is not particularly sensitive. However, several potential contaminant sources were identified on-site.

of surface water

Significant flushing of debris may occur in the intermittent stream valleys.

Initial Assessment of Site Vulnerability:

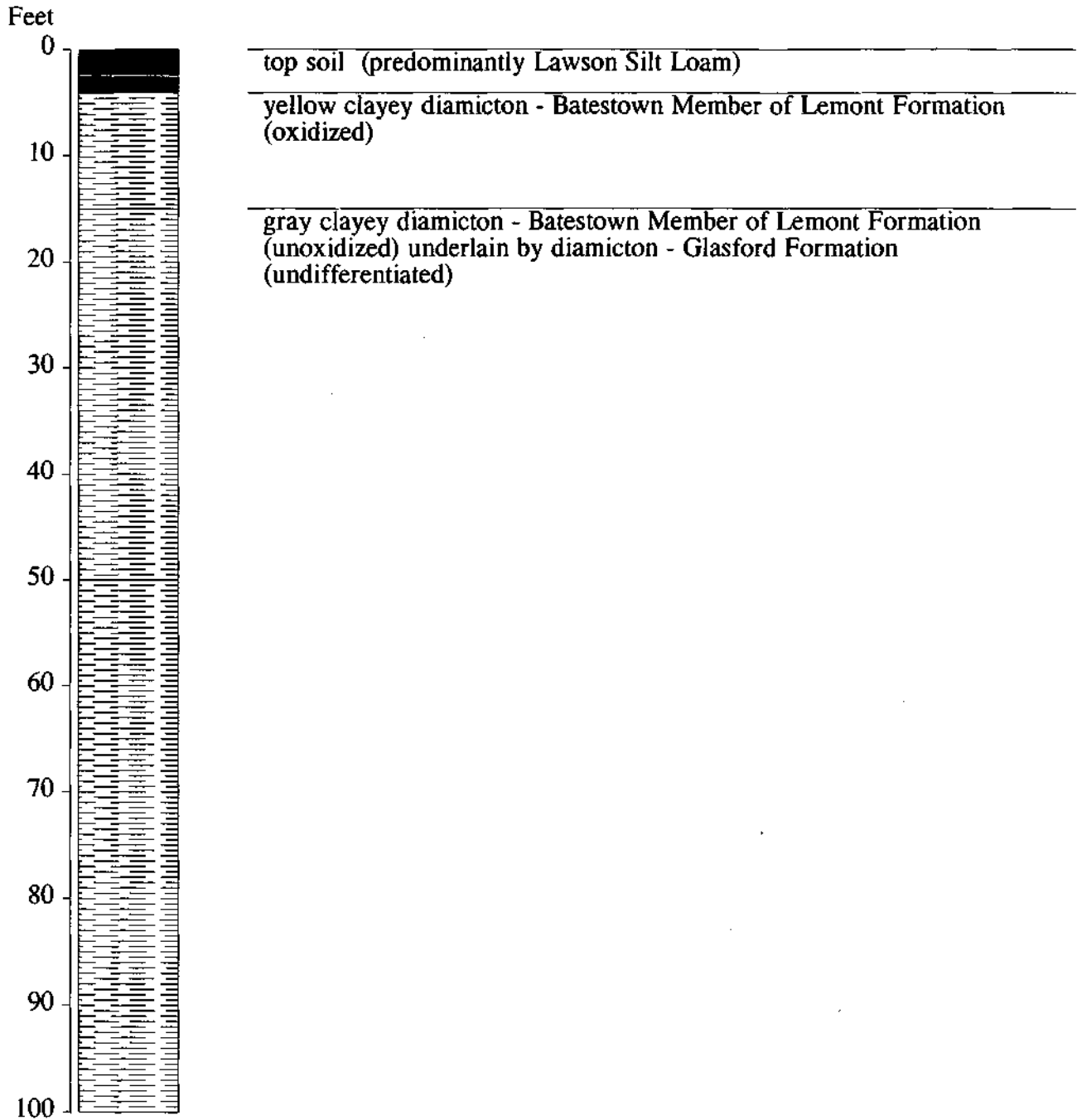
from ground water is moderate.

A possible threat would be introduction of contaminants to an upland well and transport downgradient.

from surface water is low to moderate.

Miller - Anderson Woods Nature Preserve
Bureau Co. - 15N 9E Sec. 36; Putnam Co. 14N 10E Sec. 6
600

Stratigraphic Column based on log in northern quadrant of Section 1



Site #: 62 NPC #: 165 Site: Momence Wetlands
 County: Kankakee Location: 13 31N 14E; 24 31N 14E
 Acres: 72.0 7.5 Map(s): Illiana Heights
 Visit date: 07/08/96 Field crew: RCB MVM
 Photos taken? Yes Number: 7
 Photo description: pipeline area and other general views

SAMPLE INFORMATION

Source: pond

Sample 1 is from a forested area west of the road
 about 150 feet.

pond

Sample 2 is about 500 feet south of sample 1.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/08/96	03:57 P		23.7	780	-10
Sample 2	07/08/96	04:32 P		26.2	1090	1180

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
pipelines	x		oil pipeline through site expected based on conversation with resident

AGRICULTURAL

	on site	off site	location & description
row crops		X	south of site (Route 114)

other		X	'vegetable crops' - south of site (Route 114)
RURAL RESIDENTIAL			
	on site	off site	location & description
domestic wells (inferred septic system)		X	east of site; between the site and the Kankakee River (downgradient); Wells are also on the other side of the river.
TRANSPORTATIONAL			
	on site	off site	location & description
gravel road		X	east of site

Is there potential impact from runoff? Yes.
 Minor impact from gravel road runoff is expected.

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

	location
dumping	near or at east site boundary, very old dumping

HYDROLOGY:

INPUTS

ground water

Flow is toward the Kankakee River (primarily from south to north). However, a meander lake borders the site to the south effectively interrupting any potential impacts from the south.

surface water

from Kankakee River flooding

OUTPUTS

ground water

Flow off-site is expected due to local gradients towards the Kankakee River.

surface water

Outputs include flow to the meander cut-off lake south and southwest of the site or overland flow to the Kankakee River.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial

SOIL ASSOCIATION/SERIES

Gilford and Hoopston (sandy soils)

QUATERNARY DEPOSITS

20-30 feet of sand over 20 feet of lacustrine materials or diamicton

BEDROCK

upper lithology: limestone, dolomite

depth: 50 - 100+ feet

GEOMORPHOLOGY

Preserve is in a floodplain setting on the inside of a Kankakee River meander bend with an abandoned meander south of site.

TOPOGRAPHY

flat with less than 10 feet of relief; floodplain of the Kankakee River

Potential for Contamination:

of ground water

minimal - Septics are downgradient and east of the site (between the site and the Kankakee River).

of surface water

via Kankakee River flooding

Initial Assessment of Site Vulnerability:

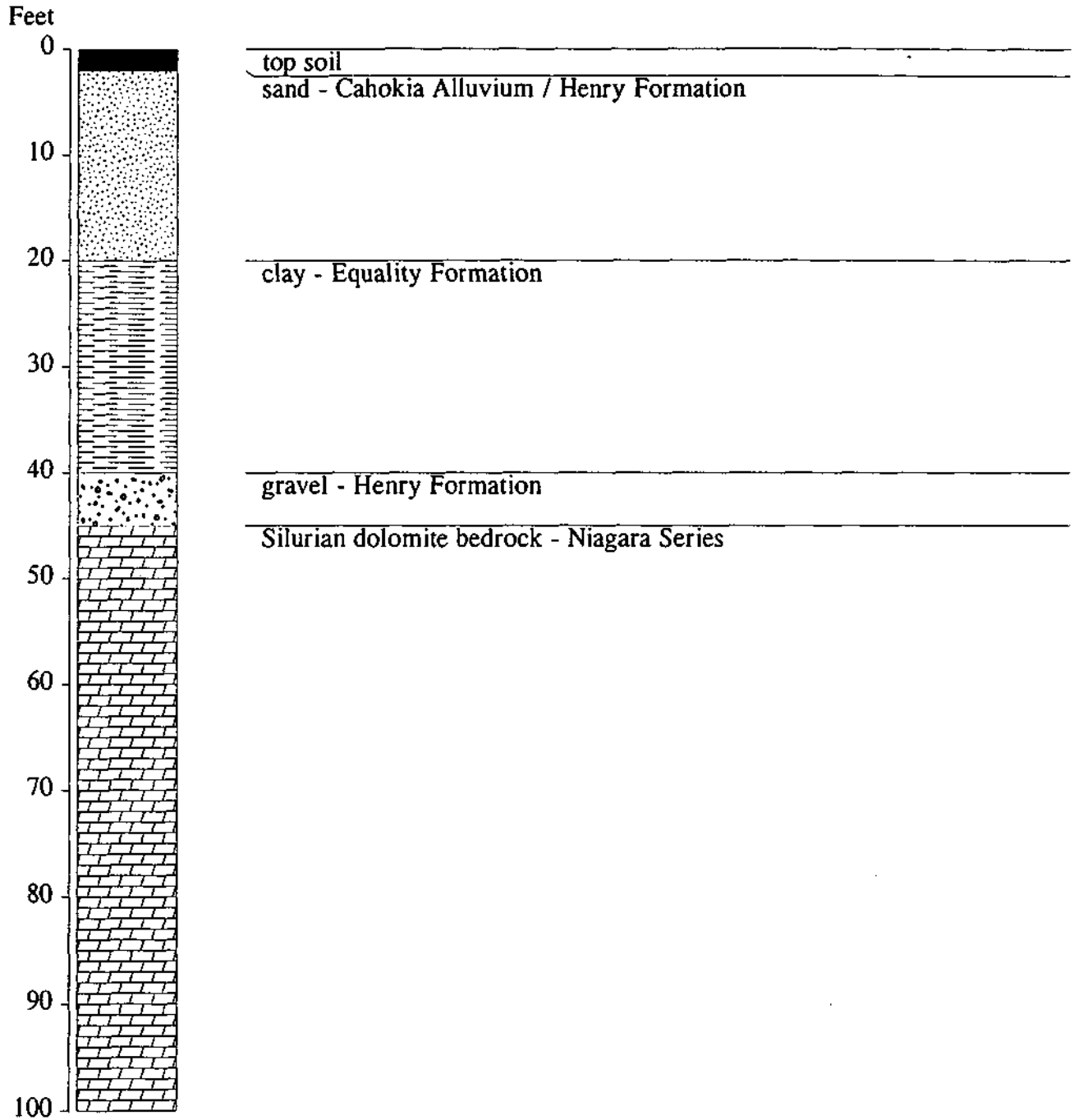
from ground water is moderate.

Vulnerability is generally very low. Upgradient potential sources are separated from the site by a meander bend lake. Houses/septics are downgradient of the site. However, overall vulnerability is moderate due to a pipeline crossing (not on topographic map).

from surface water is low.

Momence Wetlands Nature Preserve
Kankakee County - 31N 14E Sections 13, 24
625

Generalized Stratigraphic Column based on logs in Sections 13 and 24



Site #: 33 NPC #: 80 Site: Nelson Lake Marsh
 County: Kane Location: 24 39N 7E; 25 39N 7E
 Acres: 172.0 7.5 Map(s): Sugar Grove, Aurora North
 Visit date: 07/11/96 Field crew: RCB MVM
 Photos taken? Yes Number: 4
 Photo description: panoramic view and sample site

SAMPLE INFORMATION

Source: wetland

from a depressional pond on east side of the site
 at end of observation park; near the northeast
 corner off of Nelson Lake Road (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/11/96	05:30 P	11.2	29.0	650	199

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	north of site

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	east and west of site
livestock	X		north of site with drainage access to site

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	on east and north borders

Is there potential impact from runoff? Yes.
Runoff from Main Street and Nelson Lake Road is possible.

RECREATIONAL

	on site	off site	location & description
outhouses	X		center of site near Nelson Lake Road
trail development	X		loop in site
parking		X	along Nelson Lake Road

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is from the west, north and east.

surface water

Inputs are: a ditch emanating from a new subdivision which enters Nelson Lake in the southeast corner of site and overland flow from other directions particularly from the east to the site.

OUTPUTS

ground water

Discharge occurs to Nelson Lake and wetland areas.

surface water

via Lake Run which leaves the site in the south

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

There is a large area of Houghton Muck surrounded mainly by Morely and Octagon silt loam.

QUATERNARY DEPOSITS

Grayslake Peat (about 2-5 feet thick)/Yorkville Till (0-20 feet)/sand and gravel (20-70 feet)/ till (>70)

BEDROCK

upper lithology: limestone, dolomite

depth: 125+ feet

GEOMORPHOLOGY

Site occurs near the south end of Marengo Moraine and the east end of Farmridge Moraine.

TOPOGRAPHY

very flat marsh; about 60 feet of relief northeast of site

Potential for Contamination:

of ground water

from upland residential area

of surface water

from Main Street and Nelson Lake Road, as well as a ditch in the southeast part of site

Initial Assessment of Site Vulnerability:

from ground water is low.

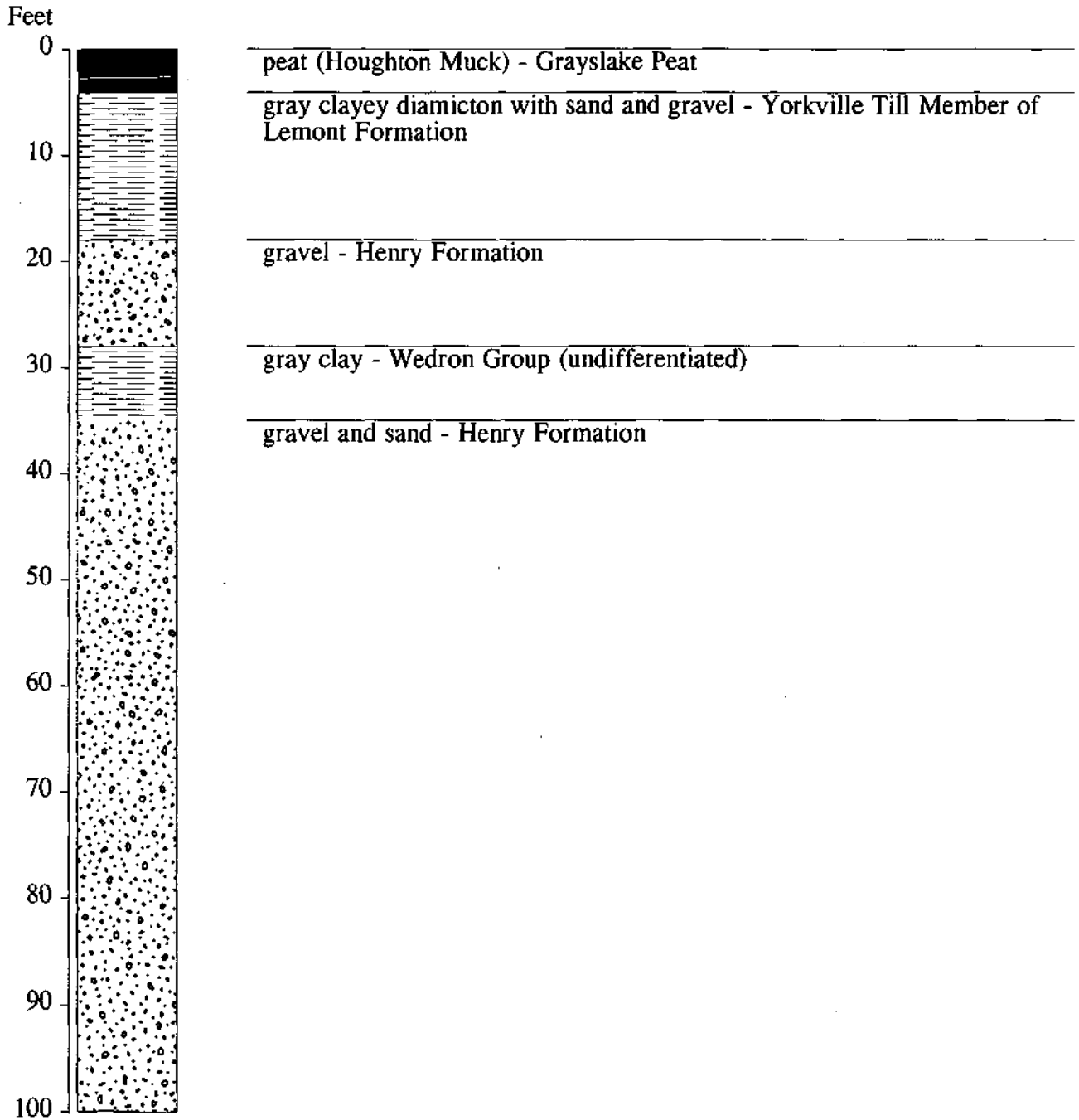
The low sensitivity of the Yorkville Till protects ground water at the site.

from surface water is low to moderate.

Vulnerability could increase due to subdivision development east of the site.

Nelson Lake Marsh Nature Preserve
Kane Co. - 39N 7E Sec. 24, 25; 39N 8E Sec. 19, 30
700

Stratigraphic Column based on log in Section 25: 400'SL 1000' EL, SE



Site #: 2 NPC #: 166 Site: North Dunes
 County: Lake Location: 14 46N 12E, 15 46N 12E, 22 46N 12E
 23 46N 12E
 Acres: 200.0 7.5 Map(s): Zion
 Visit date: 07/10/96 Field crew: RCB MVM
 Photos taken? Yes Number: 3
 Photo description: panorama of dune area;looking North down
 service road

SAMPLE INFORMATION

Source: wetland
 in wetland about 300 feet west of Chelsea Road;
 noted on topo

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/10/96	11:25 A	8.9	22.7	650	47

PAST ON-SITE LAND USE:

The east half of the site was developed with roads and houses.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns	X		on east 1/2 of site; All structures were removed to make the nature preserve.
domestic wells underground disposal	X		see 'lawns' above
	X		see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
other		X	'nuclear plant' - southeast of site

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road	X	X	service roads closed to through traffic
railway		X	abandoned on south site boundary

Is there potential impact from runoff? Yes.

Very minimal impact is expected.

RECREATIONAL

	on site	off site	location & description
parking	X		on north end on edges of site

ON-SITE MISCELLANEOUS

location
dumping boards and concrete

HYDROLOGY:

INPUTS

ground water

Flow is from the northwest to the southeast into Lake Michigan.

surface water

Kellogg Ravine flows along the northern site border.

OUTPUTS

ground water

to Lake Michigan

surface water

Surface water could flow out of Kellogg Ravine.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, eolian

SOIL ASSOCIATION/SERIES

Well-drained Entisols are on the uplands (e.g., Chelsea) and poorly-drained soils are in the lowlands (e.g., Grundy).

QUATERNARY DEPOSITS

about 25 feet of Parkland Sand and Henry Formation over Wadsworth Till

GEOMORPHOLOGY

beach-ridge/dune complex

TOPOGRAPHY

A flat wetland area is to the west and a large beach ridge and dunes are to the east. Ridges also occur within the wetland area.

Potential for Contamination:

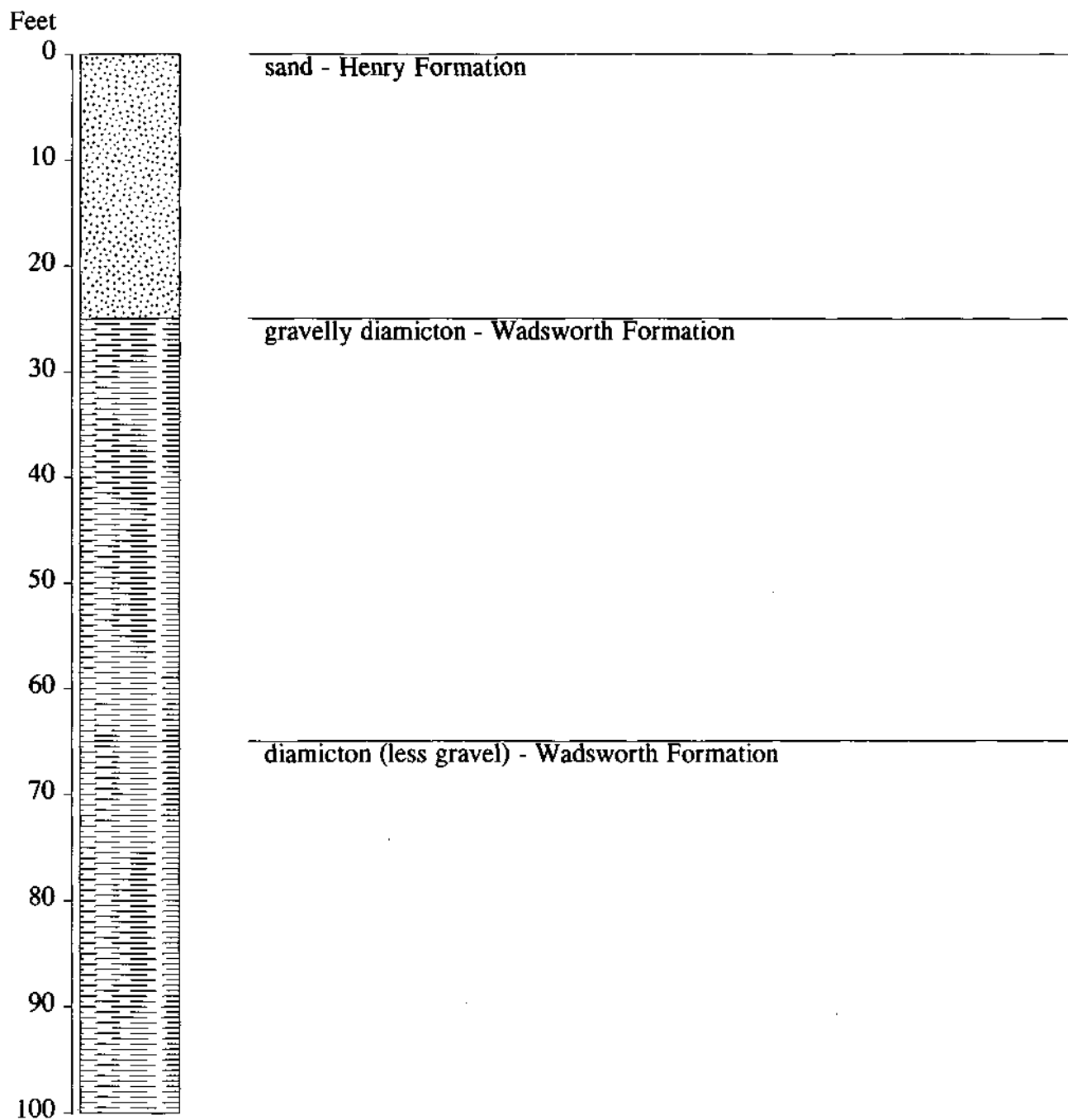
of ground water
from previous development
of surface water
from Kellog Creek

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.
Old development (houses and roads) exists on east half of site.
from surface water is low.

North Dunes Nature Preserve
Lake County - 46N 12E Sections 14, 15, 22, 23
590

Stratigraphic Column based on U.S.G.S. log on the Camp Logan Campground Area



Site #: 24 NPC #: 138 Site: Oakwood Hills Fen
 County: McHenry Location: 36 44N 8E, (SW NE)
 Acres: 12.7 7.5 Map(s): Wauconda, Barrington
 Visit date: 06/18/96 Field crew: RAL HAW
 Photos taken? Yes Number: 5
 Photo description: R6 P16 - 20: see topo (Barrington Quad)
 for details

SAMPLE INFORMATION

Source: other

'spring' - This spring flows into a creek which flows through this fen and Bates Fen immediately east. Sample was taken 20 meters downstream of a bridge crossing the creek at the southwest entrance to the preserve adjacent to East Park Drive (noted on sketch in original field sheet).

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	06/18/96		7.3	10.9	820	106

PAST ON-SITE LAND USE:

The site was known to have been farmed between the late 40's and cattle grazed the property in the 60's and into the 70's. The Village of Silver Lake acquired the property from ComEd in 1981 and since then it has been under preservation.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	Residential housing is on the south and west sides. New housing is going in to the north, where farmland used to be.
domestic wells underground disposal		X	see 'lawns' above
		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
production wells		x	Water wells present on property of Sun Electric plant located northwest of the fen at the southeast corner of Route 176 and Silver Lake Road (southwest 1/4, Section 25)
other		x X	'hazardous materials handling/storage' - possible at Sun Electric (see above note for location).

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	along southern boundary, East Park Drive
paved road		X	along western boundary, Oakwood Drive

Is there potential impact from runoff? Yes.

High flows are possible in the creek entering the fen from Silver Lake (sketch on file). Very steep hills occur on the south and west sides of the preserve.

RECREATIONAL

	on site	off site	location & description
trail development	x	X	trail enters southwest corner of fen, crosses creek and passes along western preserve boundary
other	X		softball diamond, picnic tables, etc. on upland at northwest corner of fen

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

We expect the general (regional) ground-water flow direction is to the east or northeast toward the Fox River. We observed strong flowing springs discharging to Silver Creek along the northwest bank coming out of the steep morainal face overlooking fen. Depth to ground water is highly variable due to large topographic relief--well records report static water levels from 20 to 90 feet.

surface water

Predominant surface flow is from the southwest corner of fen the out the east boundary of preserve. We observed the creek to be a very fast flowing creek (Silver Creek) probably due to recent heavy rains in the area.

OUTPUTS

ground water

Discharge is clearly evident to Silver Creek. Strongly flowing springs were observed moving out of coarse gravel deposits on the creek bank and flowing into Silver Creek.

surface water

Discharge moves out of the eastern boundary, flows through the adjacent Bates Fen, and eventually reaches the Fox River.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

predominantly Houghton/Lena Muck and Casco Silt

QUATERNARY DEPOSITS

Grayslake Peat/Equality Formation/Henry Formation

BEDROCK

upper lithology: limestone

depth: 196 - 248 feet

GEOMORPHOLOGY

The fen is located between upland glacial outwash and morainal deposits. Silver Creek runs through the fen. It enters the preserve at the southwest corner at an elevation of about 780 feet and exits on the east boundary at 740 feet.

TOPOGRAPHY

high relief on west and south (40'/500' = 0.08'/1 or 8%); Slopes as great as 15% are stated in the dedication report.

Potential for Contamination:

of ground water is moderate to high.

Geology is fairly sensitive but the only major potential source of contamination appears to be septic systems.

of surface water is moderate to high.

Silver Creek flows rapidly through the fen--this could be good and/or bad. The creek appears to keep major flows restricted to the channel rather than having a diffuse flow that might affect large portions of the site.

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

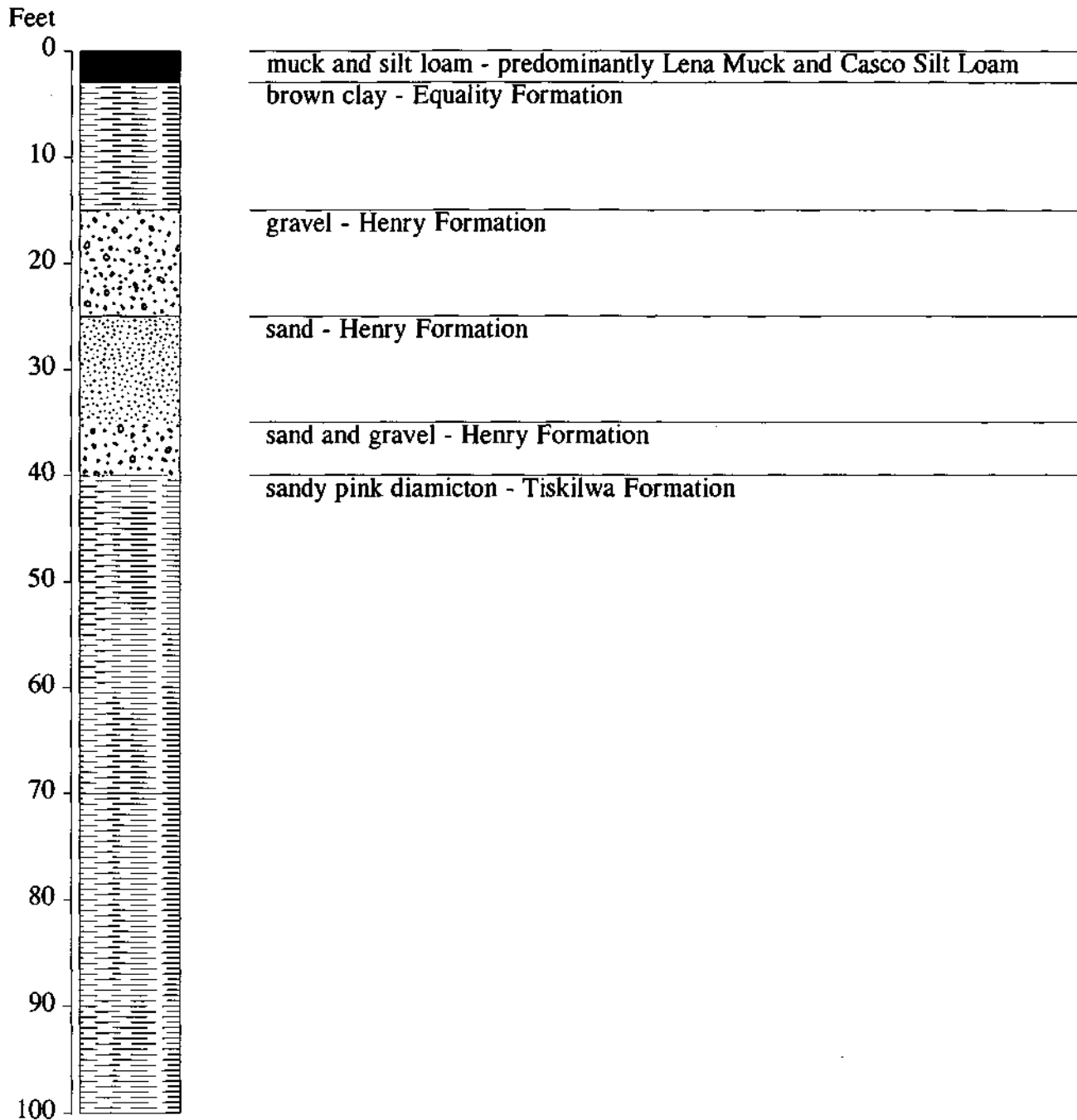
Vulnerability is due to near surface presence of sand and gravel and very strong and apparently quick discharge of ground water to Silver Creek. However, obvious sources of contamination were not identified. Septic systems throughout the area are the largest potential threat to ground-water quality.

from surface water is high.

If Silver Lake becomes contaminated, it may pass contamination through to the fen.

Oakwood Hills Fen Nature Preserve
McHenry County - 44N 8E, Section 36
760

Generalized Stratigraphic Column based on logs in Section 36



Site #: 39 NPC #: 120 Site: Palos Fen
 County: Cook Location: 15 37N 12E, (NE)
 Acres: 70.0 7.5 Map(s): Palos Park
 Visit date: 07/09/96 Field crew: RCB MVM
 Photos taken? Yes Number: 2
 Photo description: panoramic view from 107th Street

SAMPLE INFORMATION

Source: wetland

Sample 1 was from a depression with cattails
 along 107th Street about 600 feet west of 88th
 Avenue (noted on topo).

wetland

Sample 2 was taken along 107th Street about half
 way across the site (noted on topo).

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/09/96	01:32 P	8.2	20.7	1750	-19
Sample 2	07/09/96	01:52 P	8.2	17.0	1480	24

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	borders site to north
domestic wells		X	homes are on city water

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
pipelines	X		crosses mid-site south to north
other		X	'commercial buildings' - to southeast - no threat

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	surrounding site on west, south and east and northeast

Is there potential impact from runoff? Yes.
Flow is to the southeast down the slope to the Cal Sag. Runoff threat is from roads to the north and west of the site.

RECREATIONAL

	on site	off site	location & description
other		X	'forest preserve' - borders site to west; separated from the site by a paved road

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Recharge occurs through the Tinley Moraine. Flow is downslope to the southeast.

surface water

Overland flow is downslope toward the southeast to the Cal Sag Channel

OUTPUTS

ground water

Discharge occurs in the fen along the contact of Wadsworth Till with sand and gravel in the southeast part of the site.

surface water

Flow from Lucas Ditch (about 1/8 mile east of the site) flows into Stony Creek and then into the Cal Sag channel.

GEOLOGY:

Primary geologic origin(s): glacial, lacustrine

SOIL ASSOCIATION/SERIES

Morely on uplands, Fox on beach ridges, and Houghton
Muck in the fen

QUATERNARY DEPOSITS

Wadsworth Till in uplands (maximum thickness is about 60 feet) thins to the southeast where it overlies sand and gravel. The sand and gravel overlies a more permeable bedrock material. Beach levels at 640, 620, and 600 feet elevation mark Lake Michigan stands.

BEDROCK

upper lithology: limestone, dolomite

depth: 85 - 100 + feet

GEOMORPHOLOGY

sloping moraine surface to the southeast; lower slope and flat area to the southeast

TOPOGRAPHY

flat upland (at elevations greater than 675 feet) in the northwest; Steep slopes occur in the middle of the site (at elevations from 625-675 feet) and gentle slopes are in southeast (at elevations from 595-625 feet).

Potential for Contamination:

of ground water

from lawn chemicals and salts from residential areas north of site; Areas are densely developed and are not on septic systems.

of surface water

from road runoff directly into fen (particularly from 107th Street south of site) and also from roads west and east of site

Initial Assessment of Site Vulnerability:

from ground water is low.

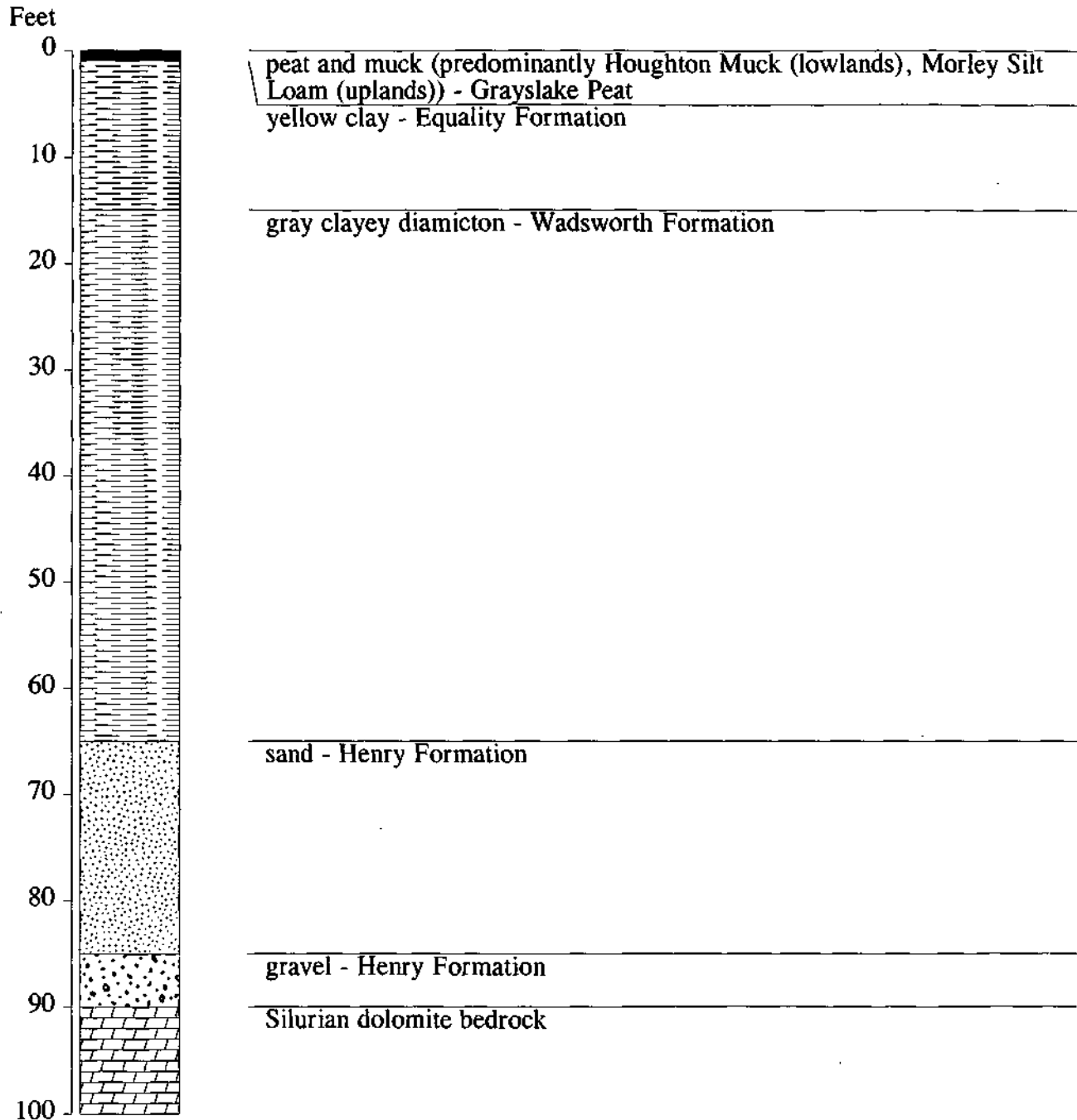
There are very few residences. Those present are expected to be using city water and sewer.

from surface water is low to moderate.

The forest preserve is to west and north. Some contamination from road salts is expected, however the ditch on the south border drains to the east.

Palos Fen Nature Preserve
Cook County - 37N 12E Section 15
675

Stratigraphic Column based on log in Section 15: SW NW NE



Site #: 56 NPC #: 96 Site: Pecatonica Bottoms
 County: Winnebago Location: 10 27N 10E; 11 27N 10E
 Acres: 58.8 7.5 Map(s): Pecatonica
 Visit date: 04/11/96 Field crew: RAL SCM
 Photos taken? Yes Number: 2
 Photo description: Both R3P9 and R3P10 (noted on topo) show
 the main oxbow feature in the preserve.

SAMPLE INFORMATION

Source: lake
 at the southeast edge of the oxbow lake (noted on
 topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/11/96	7:03 P	9.3	15.9	340	81

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	directly north of preserve
domestic wells		X	directly north of preserve
underground disposal		X	directly north of preserve

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	to north and west

pasture
 livestock. X to north
 X to north

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
dirt road	x		walking trail/access road from Brick School Road which leads to and around the oxbow lake
paved road		x	Judd Road (north) and Brick School Road (west)

Is there potential impact from runoff? Yes.
 from paved roads

RECREATIONAL

	on site	off site	location & description
other		X	'gas tank' - at park maintenance building
trail development	x		Walking trails are developed throughout the site.

ON-SITE MISCELLANEOUS

location
 flood debris throughout bottom lands

HYDROLOGY:

INPUTS

ground water

Ground water is at or near the surface in the bottom lands. Southeasterly ground-water flow is expected (i.e., away from the nose of the moraine) to the northwest. Westerly flow is likely in the northern portion of the preserve. Northeasterly flow is likely in the area closer to Pecatonica River.

surface water

Flood waters are an intermittent input. Most small valleys to the northwest of the oxbow lake were dry during our visit. The river flows north towards the southern tip of the nature preserve and then meanders around it.

OUTPUTS

ground water

Discharge from the northwest is likely to the oxbow lake. No hillside seeps were noted on visit. A corrugated drainpipe is located under the walking trail southwest of the scenic overlook. The northwest end of pipe was buried in the slope and no flow was seen from the southeast end.

surface water

No distinct channels issue from the preserve.

ALTERATIONS

Recreational development (trails, walking bridges, etc.) has occurred with little to no impact.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Lawson silt loam in low areas with a little Fayette and St. Charles in higher areas

QUATERNARY DEPOSITS

Cahokia Alluvium/Equality Formation/Henry Formation

BEDROCK

upper lithology: limestone, dolomite

depth: 46 - 178 feet

GEOMORPHOLOGY

A portion of the Pecatonica River Floodplain (low terrace) and a small portion of the valley wall occur on-site.

TOPOGRAPHY

Land surface is flat in the floodplain (less than 10 feet of relief) with about 50 feet of relief at the valley wall.

Potential for Contamination:

of ground water is low to moderate.

of surface water is low to moderate.

Initial Assessment of Site Vulnerability:

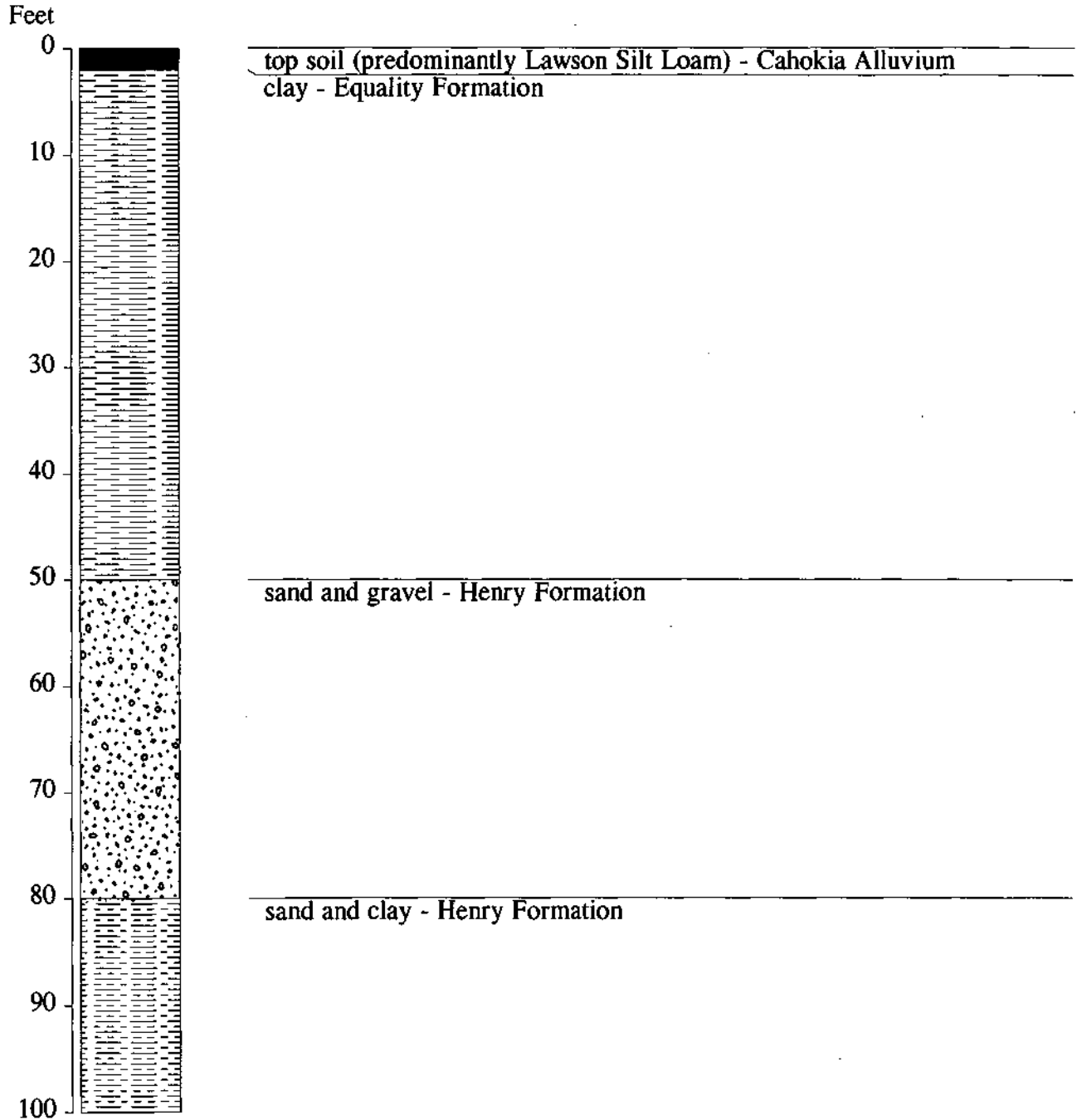
from ground water is low to moderate.

The primary concern is road runoff,
from surface water is low to moderate.

The primary threats are from chemical and physical impacts of flooding.

Pecatonica Bottoms Nature Preserve
Winnebago County - 27N 10E Sections 10, 11
760

Stratigraphic Column based on log in Section 10: SE SE NW



Site #: 58 NPC #: 16 Site: Pine Rock
 County: Ogle Location: 8 23N HE
 Acres: 59.0 7.5 Map(s): Oregon, Daysville
 Visit date: 04/11/96 Field crew: RAL SCM
 Photos taken? Yes Number: 5
 Photo description: on Pine Rock (R3P4-6), at sampling
 location (R3P3), and at culvert (R3P2)
 which drains the southern portion of the
 preserve (locations noted on topo)

SAMPLE INFORMATION

Source: wetland
 near southern boundary (see R3P3)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/11/96	11:15 A	5.7	8.5	8	214

PAST ON-SITE LAND USE:

Old foundations are just west of Pine Rock (the land form). South part of the preserve may have been farmed.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	mainly to the east
domestic wells underground disposal		X	mainly to the east
		X	mainly to the east

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
other	X		'powerlines' - run northeast-southwest through the preserve

AGRICULTURAL

	on site	off site	location & description
row crops		X	to the east
pasture		X	to the south
livestock		X	evidence of grazing south of nature preserve
above ground disposal/dumping	x		old farm equipment

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	Pine Rock Road forms the south boundary of the preserve. Minor impact is expected because the road is downslope from the preserve.
paved road	x		Illinois Route 64 crosses the north part of the preserve. Runoff into the preserve is possible.

Is there potential impact from runoff? Yes.
from Route 64

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

	location
dumping	Old farm equipment is near R3P2. Trees and brush are at extreme southeast corner.

HYDROLOGY:

INPUTS

ground water

Local flow is from north to south. Depth to ground water in southern portion of preserve is about 0 to 5 feet (commonly less than 1).

surface water

No distinct channels enter the preserve on the west, north or east.

OUTPUTS

ground water

Discharge is expected into low areas in south part of the preserve and off-site to the south because of local gradients.

surface water

Southerly discharge occurs through a roadside ditch which flows into drainage culverts under Pine Rock Road. Flow is then directed through channels towards Honey Creek.

ALTERATIONS

Dredging and ditching has increased drainage to Honey Creek. Additional information is in the dedication proposal on file.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Boone, Chelsea, LaHogue, Lemont, Rodman-Fox complex, Fox, and Comfrey soils are present.

QUATERNARY DEPOSITS

Below the bluffs the land flattens out into a glacial outwash plain. Recent (?) alluvial deposits are found in the lowest section of the floodplain. A glacial knoll of calcareous sand and gravel lies along the preserve's eastern boundary. Deposits include: Peoria Silt/ Henry Formation/Esmond Diamicton.

BEDROCK

upper lithology: sandstone

supplemental description:

St. Peter Sandstone underlies thin glacial deposits and crops out at Pine Rock. The north 1/3 of the preserve consists of moderately to steeply sloped bluffs underlain by St. Peter.

depth: 0 - 93 feet

GEOMORPHOLOGY

See NIU writeup (page 8). Pine Rock, an outcrop of St. Peter Sandstone about 50 feet high and 50 feet wide is the most notable feature. Northern 1/3 of preserve surrounding Pine Rock consists of moderately to steeply sloped bluffs underlain by the St. Peter. A glacial outwash plain occurs south of this.

TOPOGRAPHY

On-site relief is greater than 100 feet.

Potential for Contamination:

of ground water is low.

The site appears to be on a local ground-water divide (based on topography).

of surface water is low.

Agricultural fields are east, west and south of the preserve.

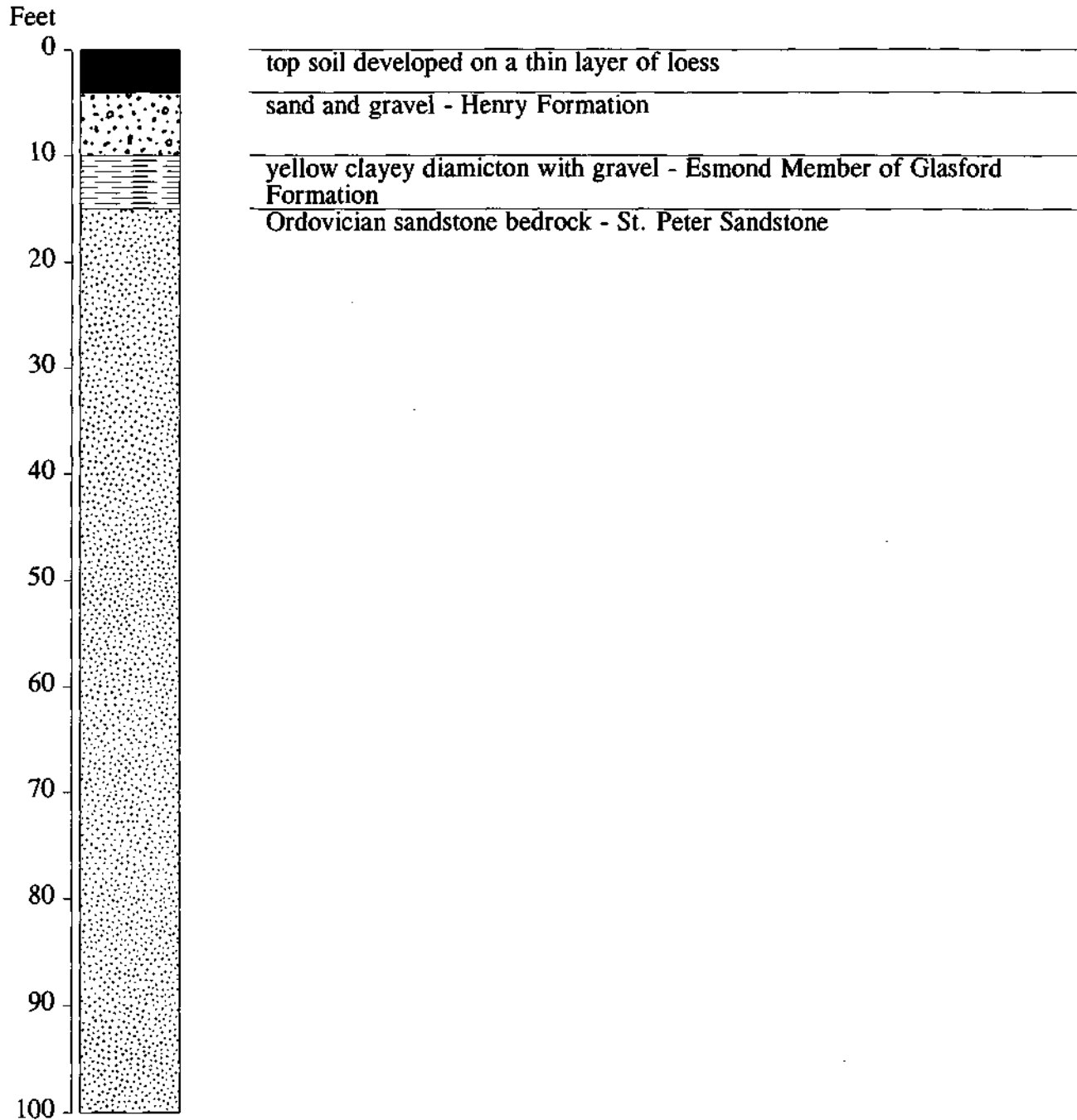
Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

from surface water is low.

Pine Rock Nature Preserve
Ogle County - 23 N HE Section 8
740

Stratigraphic Column based on information in dedication proposal



Site #: 18 NPC #: 56 Site: Pistakee Bog
 County: McHenry Location: 21 45N 9E, 28 45N 9E
 Acres: 258.0 7.5 Map(s): Wauconda
 Visit date: 05/10/96 Field crew: RAL SCM
 Photos taken? No

SAMPLE INFORMATION

Source: stream
 at stream edge outside southern portion of nature
 preserve (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/10/96	11:40 A	7.6	12.6	400	20

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	Homes are developed primarily to north of preserve along Big Hollow Road, to west of preserve (east of Cuhlman Road), and north of old gravel pit. Land around old pit is ready for development. Some development has occurred on the south side of Brandenburg Lake to east of the preserve.
domestic wells		X	see 'lawns' above

underground disposal		X	see 'lawns' above
INDUSTRIAL/COMMERCIAL/MUNICIPAL	on site	off site	location & description
mining		X	old pit adjacent to preserve to west; functioning pit to southeast just east of Volo Bog preserve.
AGRICULTURAL	on site	off site	location & description
row crops		X	north of preserve and south of Big Hollow Road; also north of Sullivan Lake Road and south of preserve (just east of Sullivan Road & Brandenburg Road intersection)
storage tanks		X	probably at farm south of preserve
livestock		X	at farm south of preserve
surface impoundments/feed lots		X	at farm south of nature preserve

drainage wells/tile
outlets/ditches

X

Linear channels (one from north to south in west part of preserve; one from southeast to northwest from center of preserve) appear to be drainage ditches. A similar channel is noted in the eastern part of the preserve leading to Brandenburg Lake.

RURAL RESIDENTIAL

on site off site

location & description

domestic wells
(infers septic system)

X

primarily to south and southwest of preserve (north and south of Sullivan Lake Road)

TRANSPORTATIONAL

on site off site

location & description

paved road

X

sketch on file

Is there potential impact from runoff? No.

RECREATIONAL

on site off site

location & description

other

X

'stables' - on north side of nature preserve; south of Big Hollow Road

ON-SITE MISCELLANEOUS

location
dumping some dumping near ag field south of
nature preserve

HYDROLOGY:

INPUTS

ground water

Shallow ground-water inputs consist of subsurface flow predominantly from west and south, with lesser contributions from the north. Ground water is at the surface in the bog area and is near the surface in most of the remainder of the preserve, which is flat and at only a slightly higher elevation than the bog. On the hills contained within the preserve and along its margins, ground water is deeper, perhaps 20-30 feet below land surface. Local flow is complex. Generally flow lines converge on the preserve, which is predominantly a ground-water discharge area. Flow lines probably diverge from the small hills contained within the preserve. Recharge areas are the hills and upland surrounding the preserve as well as the hills within the preserve.

surface water

No permanent or intermittent streams are mapped as entering the preserve. Surface water inputs do, however, include wetland areas to the south, from which surface water flows northward into the preserve. Runoff from slopes surrounding the preserve may enter sporadically during and shortly following rainfall events. Paving and drainage work in developed areas to the northwest, north and east probably increase runoff into the preserve.

OUTPUTS

ground water

Ground water discharges by seepage and evapotranspiration over most of the area of the preserve. Shallow ground water may flow out of the nature preserve, along the east margin where it discharges into Brandenburg Lake a short distance (less than 0.1 mi.) to the east.

surface water

The main bog area, in the west half of the nature preserve, drains northward into Pistakee Lake. Wetland areas in the east half of the preserve drain northeast into Brandenburg Lake.

ALTERATIONS

The quad map shows straight channels trending roughly northward through Pistakee Bog. These are probably not effective at lowering water levels in the area as the bog is at about the lowest elevation that exists in the area anyway. Paving and drainage features (ditches, etc.), to the northwest, north and east probably have (1)increased runoff from these areas, (2)caused localization of surface water input in these areas and (3)increased the rate of surface water input following rainfall events.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

The Houghton Muck and Houghton Peat underlie the bog and other wetland areas. Other units include these: Hennepin loam, Fox loam, Wauconda silt loam, Rodman gravelly loam, Pella silty clay loam, Grays silt loam, Boyer sandy loam, Saylesville silt loam, Zurich silt loam, Harpster silty clay loam.

QUATERNARY DEPOSITS

Grayslake Peat/thin Equality Formation/Henry Formation/Equality Formation/Henry Formation

BEDROCK

upper lithology: dolomite

depth: 150+ feet

GEOMORPHOLOGY

kettle depressions

TOPOGRAPHY

The area is relatively flat. Total relief on-site is about 30 feet. The site is part of the Pistakee Lake Lowland and is surrounded by kamic uplands.

Potential for Contamination:

of ground water is moderate to high.

Sensitive geology and potential sources were identified.

of surface water is moderate to high.

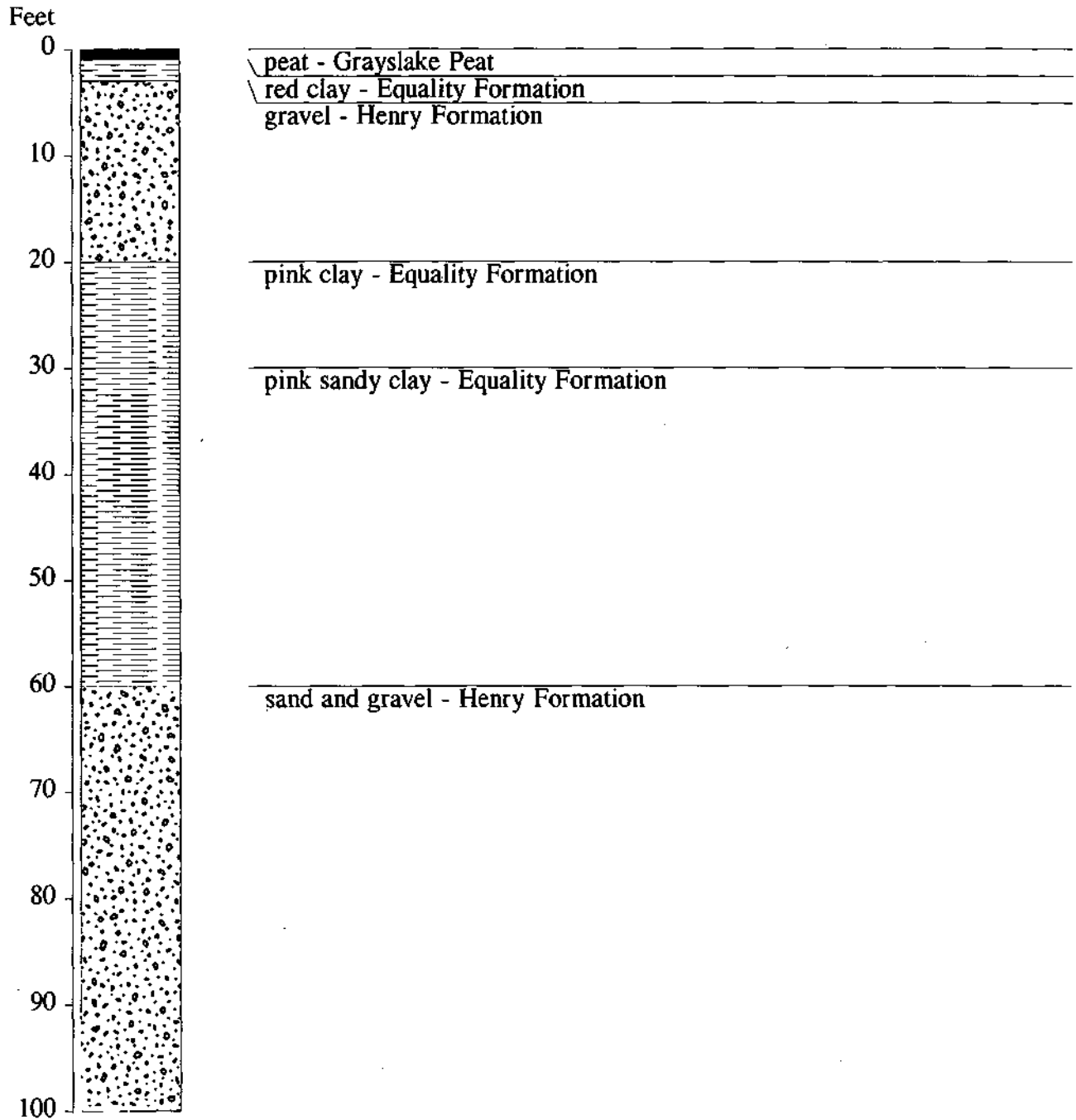
Most of the surface water inputs are protected.

Initial Assessment of Site Vulnerability:
from ground water is moderate to high.

from surface water is moderate.

Pistakee Bog Nature Preserve
McHenry Co. - 45N 9E Sec. 21,28; Lake Co. - 45N 9E Sec. 20, 29
750

Stratigraphic Column based on log in Section 20: SE SE NE



Site #: 54 NPC #: 36 Site: Rockton Bog
 County: Winnebago Location: 3 46N 1E
 Acres: 67.0 7.5 Map(s): South Beloit
 Visit date: 04/12/96 Field crew: RAL SCM
 Photos taken? Yes Number: 1
 Photo description: R3P20: at sampling location (noted on
 topo)

SAMPLE INFORMATION

Source: wetland
 from water contained in shallow channel
 immediately west of Prairie Avenue access point
 (see R3 P20)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/12/96	10:30 A	7.8	7.0	480	74

PAST ON-SITE LAND USE:

Light grazing is noted in the nature preserve dedication proposal. The area may have been mowed and burned as well.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	north and east of nature preserve; these are farmhomes and scattered rural residences.
domestic wells underground disposal		x	see 'lawns' above
		X	see 'lawns' above; also there may be a septic tank at the site of the removed building at the Prairie Avenue access point.

other		X	'pond' - with berming causing siltation north of nature preserve (see 3/14/94 memo from Jim Heim
other		X	'dumping' - junk cars

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on	off	
	site	site	location & description

other		X	'kennels' - north of preserve
-------	--	---	----------------------------------

AGRICULTURAL

	on	off	
	site	site	location & description

row crops		X	north of preserve
pasture		X	north of preserve
tree farms		X	nursery immediately- southeast of preserve
storage tanks		X	at nursery (?)
livestock		X	horses north of preserve
surface impoundments/feed lots		X	A few horses were observed in a pen north of the preserve.

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on	off	
	site	site	location & description

paved road		X	Prairie Avenue (east) Blackhawk Raceway (raceway access south and west) Pann Road (north)
------------	--	---	--

Is there potential impact from runoff? Yes.
from paved roads

RECREATIONAL

	on site	off site	location & description
other		X	'sports car race track' - south and west of preserve

ON-SITE MISCELLANEOUS

location
dumping A pile of refuse (cans, bottles, oil containers, bed springs, etc.) is present at the site of the removed building at the Prairie Avenue access point.

HYDROLOGY:

INPUTS

ground water

Shallow ground-water flow is generally to the southwest. Depth to ground water is 0 to 5 feet.

surface water

Ditch crossing north part of nature preserve may receive runoff from the pond and associated berms noted in the Heim memo of 3/14/94. No other distinct inputs were noted.

OUTPUTS

ground water

Seepage occurs in shallow channels and across low areas of nature preserve. Local gradients may carry ground water off-site to the south and west.

surface water

Intermittent streams flowing southwest and west. These receive seepage as noted above.

ALTERATIONS

Ditches along adjacent roads have increased the rate of drainage of the nature preserve. Letters on file (ca. 1983) describe Casch drainage problem. Ditching extending west by Prairie Road access point was apparently done to alleviate water ponding at the now removed building.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Soils are very sandy and some are poorly drained. Muck and deep peat are present. Hononegah, Flagler, Selma, Adrian Muck and Hoopston soils are present.

QUATERNARY DEPOSITS

The nature preserve is situated on a flat sandy outwash plain of the Pecatonica Lobe (Altonian Substage of the Wisconsinan) which overlies Ordovician Dolomite. Argyle Till (which has a high sand content) and a very thin loess mantle cover the preserve. Mainly Henry Formation/Argyle Diamicton/Glasford Formation Diamicton.

BEDROCK

upper lithology: dolomite
supplemental description:

Ordovician Dolomite is the uppermost bedrock.

depth: 75 - 145+ feet

GEOMORPHOLOGY

The nature preserve is situated on a flat sandy outwash plain.

TOPOGRAPHY

flat; less than 20 feet of total relief on-site

Potential for Contamination:

of ground water is moderate.

The greatest risk is from road salt delivered to site via infiltration of runoff in road ditches and subsequent subsurface transport. Sewage sludge is or has been applied to land in this region.

of surface water is moderate.

Greatest risk is from siltation from newly constructed berms surrounding a pond north of the nature preserve.

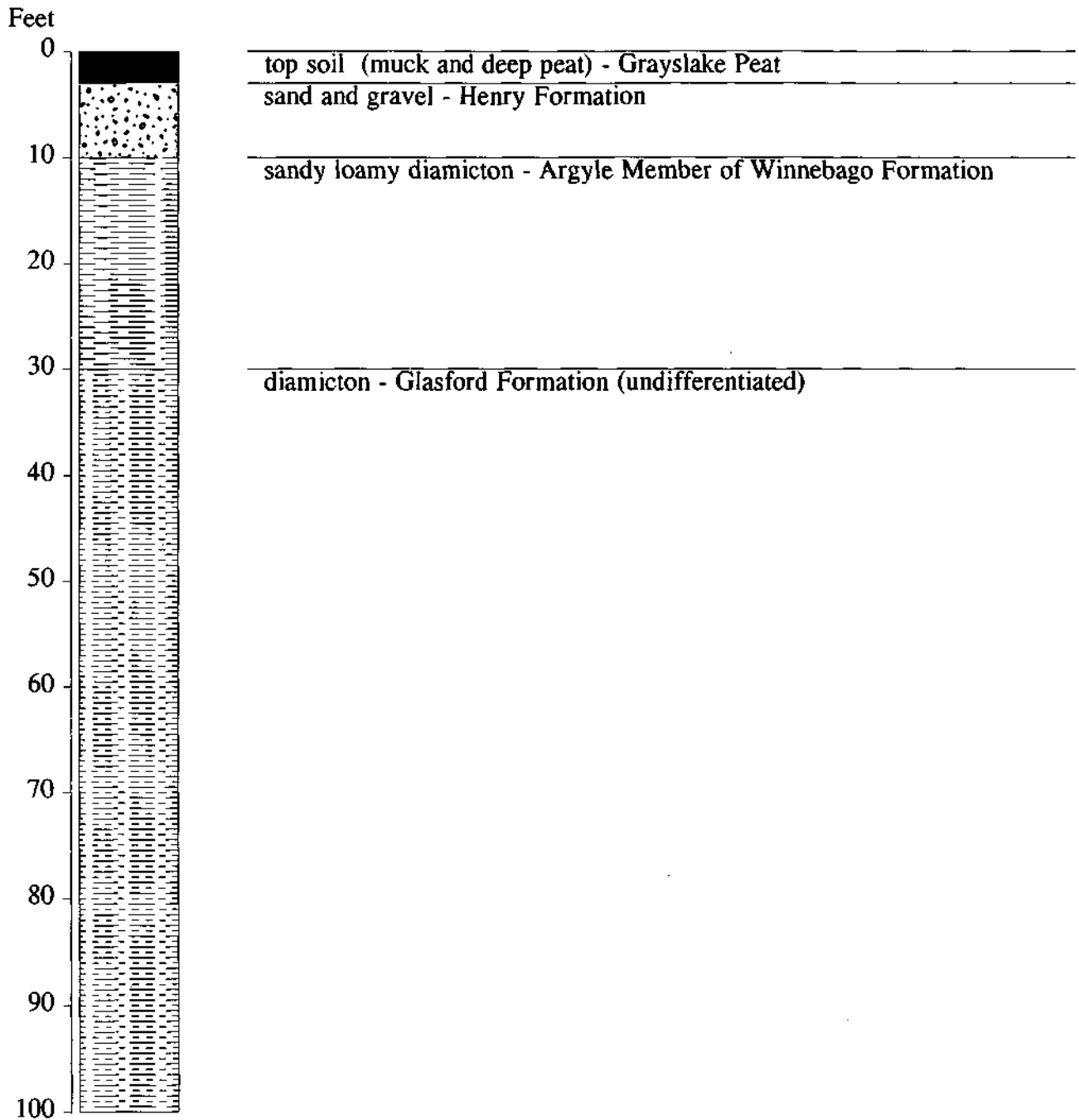
Initial Assessment of Site Vulnerability:

from ground water is moderate.

from surface water is moderate.

Rockton Bog Nature Preserve
Winnebago County - 46N 1E Section 3
745

Stratigraphic Column based on logs in eastern quadrants of Section 3



Site #: 45 NPC #: 126 Site: Romeoville Prairie
 County: Will Location: 24 37N 10E; 34 37N 10E
 Acres: 123.5 7.5 Map(s): Romeoville
 Visit date: 04/17/96 Field crew: RAL DCB
 Photos taken? Yes Number: 2
 Photo description: near site where chemical data was taken;
 R3P23 and P24 noted on topo

SAMPLE INFORMATION

Source: stream
 at west edge of preserve where the stream enters
 preserve (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/17/96	11:00 A	7.9	10.9		95

PAST ON-SITE LAND USE:

Southern 1/3 of Romeoville Prairie was used as a landfill. Grazing occurred on the west 1/3 (or more) of the preserve. An area of previous row cropping is to the northwest.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	to west side of buffer
domestic wells		X	to west

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
landfill		X	north of nature preserve (Land and Lakes Landfill)
surface impoundments		x	associated with Romeoville sewage treatment plant and industrial park to the west

mining		X	to south at Material Services Inc.; also to north in floodplain of the Des Plaines River
stockpiles			
building			
materials		X	dirt and concrete piles to the west and northwest
graveyard/carcasses		x	Resurrection Cemetery to the west
pipelines	X		Romeoville sewage treatment effluent is piped through west portion of buffer (easement granted). An oil pipeline is noted in the file on east side of preserve running north-south.
above ground disposal/dumping			
		x	
production wells		X	
other	X		'monitoring wells or test borings' - see site file for well data
other	X		'power line' - Corn-Ed R.O.W. (between buffer and preserve) extends along the west side of the preserve.
AGRICULTURAL			
	on site	off site	location & description
row crops		X	west of nature preserve in industrial park

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	
paved road		X	Romeoville Road (south), Bull Run (west), Riveredge Drive (west), Ridgewood Avenue (northwest)

Is there potential impact from runoff? Yes.
from paved roads

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

	location
dumping	off-site at the northeast corner of subdivision in southwest (by the intersection of Route 53 and Romeoville Road); at industrial park (off-site)
flood debris	in lowlands adjacent to the river

HYDROLOGY:

INPUTS

ground water

Very shallow, southerly, southeasterly, or easterly
flow is expected in the fractured upper dolomite and
overlying unconsolidated materials. Recharge areas
are to the north and west.

surface water

At least two eastward flowing drainage ditches enter
the nature preserve from the west.

OUTPUTS

ground water

General ground-water flow is expected to be east and
southeast based on topography.

surface water

Natural and manmade drainage ways flow towards the Des
Plaines River which flows southwest (to the northeast
of the preserve) and south (just east of the
preserve).

ALTERATIONS

Industrial park developers cut and filled wetland areas west of the preserve. Concern was raised about intercepting shallow ground water and surface water flow upgradient of the preserve. Actual impacts are unknown. Ditching has increased flow through and out of the preserve. Two pipelines are on-site. Aside from construction impacts, impacts are expected to be minor to moderate, barring leakage. Additional minor alterations are not discussed.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

dominantly Romeo silt loam

QUATERNARY DEPOSITS

Thin Equality Formation/Henry Formation/Yorkville Member/bedrock

BEDROCK

upper lithology: limestone, dolomite
supplemental description:

Dolomite of the Sugar Creek Formation forms the flat valley bottom of the Des Plaines River valley.

depth: 0 - 10 feet

GEOMORPHOLOGY

Site is in the Des Plaines River Valley with uplands on till. Some sand and gravel deposits occur at depth. Within the preserve relief is about 5-10 feet.

TOPOGRAPHY

Since the site is on the west side of the river, slopes are to the east. Section 34 has about 60 feet of total relief.

Potential for Contamination:
of ground water is high.

Sensitive geology occurs on and off-site with potential sources.

of surface water is high.

Industrial parks, runoff from Romeoville, and other development to the west are concerns.

Initial Assessment of Site Vulnerability:

from ground water is high.

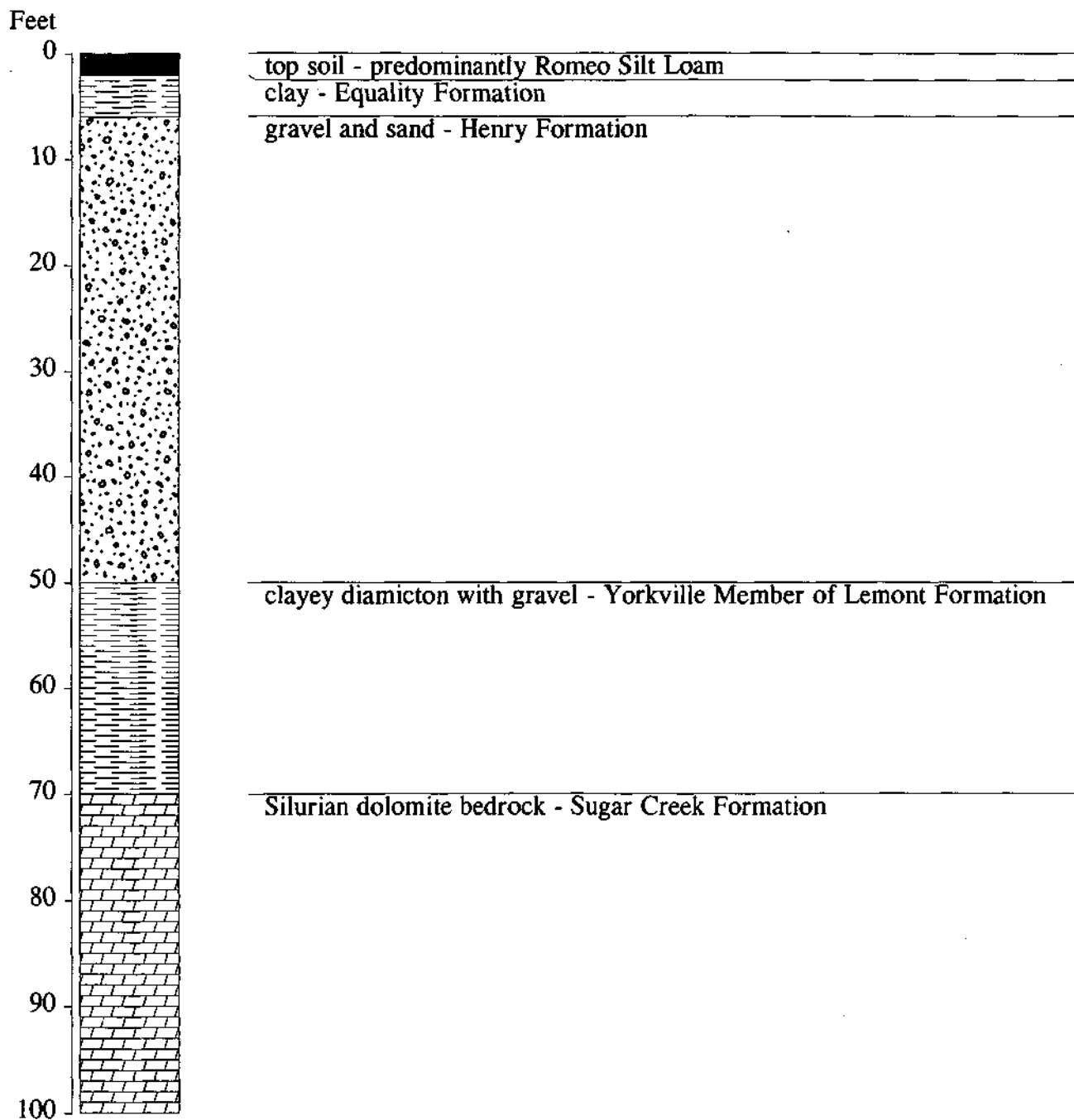
from surface water is high.

Additional Comments

Additional investigation should be done to identify if industrial discharge is occurring upgradient of the nature preserve.

Romeoville Prairie Nature Preserve
Will County - 37N 10E Sections 27, 34
650

Stratigraphic Column based on logs in the southern quadrants of Section 34



Site #: 43 NPC #: 9 Site: Sand Ridge
 County: Cook Location: 18 36N 15E
 Acres: 70.0 7.5 Map(s): Calumet City
 Visit date: 07/09/96 Field crew: RCB MVM
 Photos taken? Yes Number: 3
 Photo description: panoramic view of north part of site and
 sample location

SAMPLE INFORMATION

Source: pond

about 200 feet south of 154th Street (noted on
 topo); south of Manistee Avenue (extended)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/09/96	10:08 A	8.1	17.7	530	108

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	along southeast border, Michigan City Road, and north of site along 154th Street

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
pipelines		X	along east border of site
sewers		X	along north site border (154th Street)
other		X	'power line' ¹ - along east border of site

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road	x	X	surrounding site on west, north and south; north-south road on-site on the east side

Is there potential impact from runoff? Yes.
particularily from 154th Street since the wetland area borders it

RECREATIONAL

	on site	off site	location & description
other		X	'forest preserve' - southwest and west (across Route 183)

ON-SITE MISCELLANEOUS

location
dumping trash from 154th Street

HYDROLOGY:

INPUTS

ground water

Flow is probably to the south toward the Little Calumet River (about 1.5 miles away) or toward the Grand Calumet River to the north. Recharge areas would include the beach ridges on-site.

surface water

The primary input is expected to be overland flow.

OUTPUTS

ground water

On-site discharge occurs in swales and the direction of off-site discharge will depend on local gradients.

surface water

No surface water outputs were seen.

GEOLOGY:

Primary geologic origin(s): lacustrine, eolian

SOIL ASSOCIATION/SERIES

Watseka, Gilford, Oakville

QUATERNARY DEPOSITS

Parkland Sand/Henry Formation/Wadsworth Diamicton

BEDROCK

upper lithology: limestone, dolomite

depth: 80 - 100+ feet

GEOMORPHOLOGY

The area is part of a beach ridge dune complex. Toleston Beach runs northwest-southeast through the southern part of the site.

TOPOGRAPHY

generally flat in the north; Land surface rises to the south as the Toleston Beach is formed. On-site relief is less than 15 feet.

Potential for Contamination:

of ground water

In addition to sources noted below, some potential exists from the pipeline and powerline east of the site.

of surface water

Potential is from roads and commercial districts north and west of site, as well as, residential development to the south and north.

Initial Assessment of Site Vulnerability:

from ground water is high.

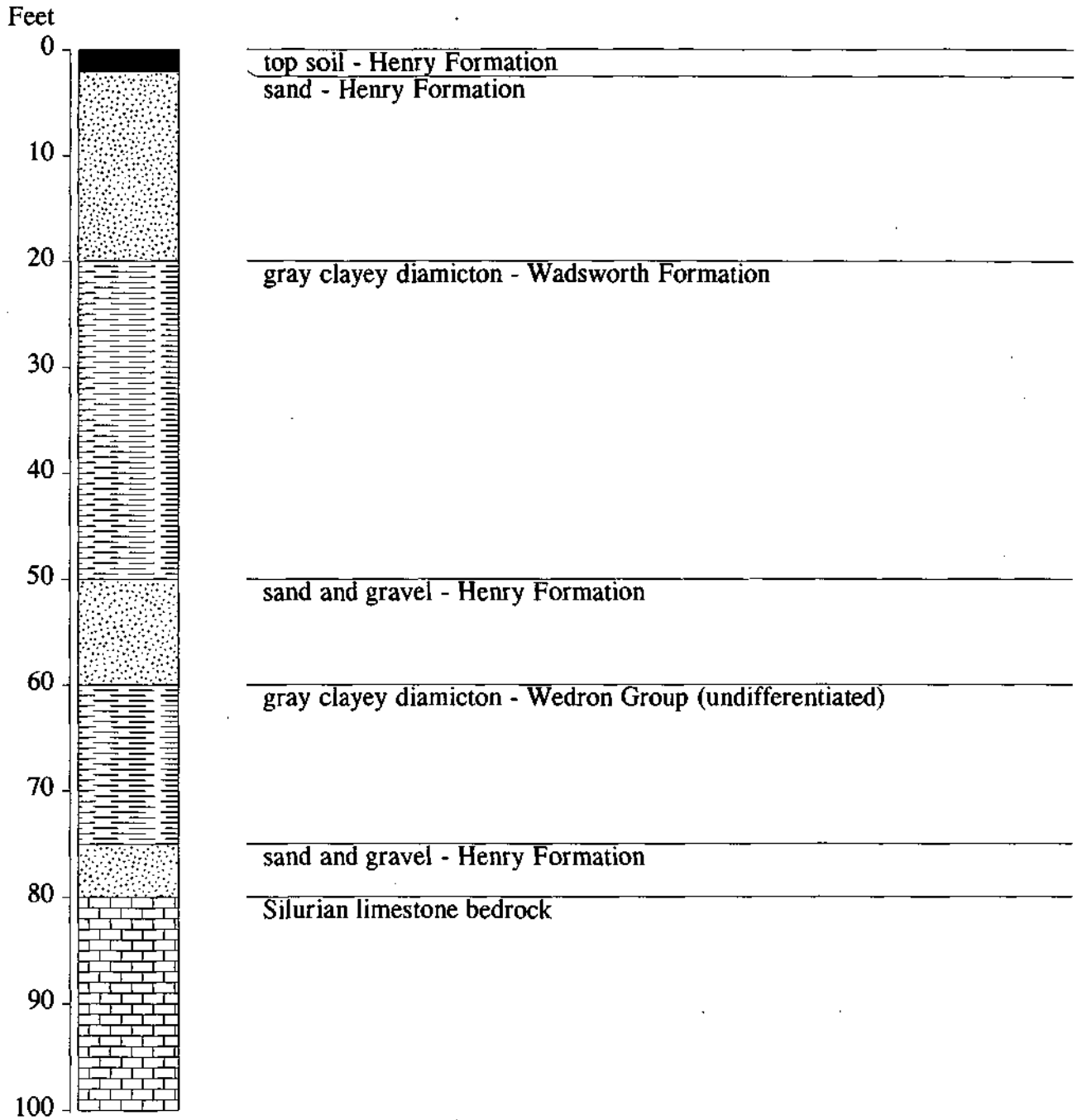
Flow is probably to the south. Therefore, forest preserve land may be of no consequence as a buffer. Commercial and residential areas are upgradient. Materials are very sandy (i.e., very sensitive).

from surface water is high.

Commercial and residential development are prevalent particularly on 154th Street (and 159th ?).

Sand Ridge Nature Preserve
Cook County - 36N 15E Section 18
600

Stratigraphic Column based on logs from Sections 7, 13, and 18 supplemented by
INAI information



Site #: 55 NPC #: 117 Site: Searls Park Prairie
 County: Winnebago Location: 9 44N 1E
 Acres: 66.0 7.5 Map(s): Rockford North, Winnebago
 Visit date: 04/12/96 Field crew: RAL SCM
 Photos taken? Yes Number: 8
 Photo description: views showing burned tussocks and
 development to the east of the preserve
 (noted on topo)

SAMPLE INFORMATION

Source: wetland
 from near the northeast corner of the preserve

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/12/96	08:00 A	7.7	10.2	670	114

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
other			'garden area' - within an area of mown grass just northeast of the preserve; We did not note a residence at the location, but there may have been one. An above-ground tank (gasoline?) was seen.

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
stockpiles			
building materials		X	east of preserve; behind the heavy equipment dealer

sewers		X	manhhole access to sewer noted just northeast of nature preserve
other		X	'businesses' - east of preserve; see 'Additional Comments'

AGRICULTURAL

	on site	off site	location & description
row crops		X	south and West of nature preserve

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	a park road (to north) and Central Avenue (to east)

Is there potential impact from runoff? Yes.
from paved roads (minor)

RECREATIONAL

	on site	off site	location & description
other		X	'Searls Memorial Park' - to the north

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

General ground-water flow is toward the south-southeast. Note that local topography is quite flat (i.e., at the nature preserve). Ground-water flow may therefore be quite complex. Ground water is at to within 3 feet of the land surface.

surface water

There is potential for the nature preserve to receive minor runoff, though no surface water inputs were observed.

OUTPUTS

ground water

Seepage occurs in channels/wetland trending roughly north-south. Local gradients may allow off-site discharge to the North Fork of Kent Creek.

surface water

The north-south trending channel has the capability to conduct surface water out of the nature preserve toward the North Fork of Kent Creek, though no outflow was observed during the field visit.

ALTERATIONS

A culvert was observed which drained from northwest into the pool where the chemical data were collected. Note that a storm sewer access was observed just northeast of the nature preserve boundary.

GEOLOGY:

Primary geologic origin(s): glacial, lacustrine

SOIL ASSOCIATION/SERIES

Flagler, Comfrey, Winnebago, Jasper and Hoopston soils

QUATERNARY DEPOSITS

Peoria Loess is at the surface. This overlies glacial materials including the Equality Formation (?lacustrine) which are up to 69 feet thick. The Henry Formation may also be present.

BEDROCK

upper lithology: dolomite
supplemental description:

Platteville Dolomite (85 feet thick) is the uppermost bedrock. This overlies the Glenwood and St. Peter Sandstone.

depth: 0 - 69 feet

GEOMORPHOLOGY

The site is on a Rock River terrace near a bluff edge.

TOPOGRAPHY

flat; about 20 feet of relief on-site; We observed a survey marker (? city survey) at the rear corner of a business lot on the east border

Potential for Contamination:

of ground water is high.

High potential is based on the proximity of obvious threats. Gradients, however, are low and subtle.

of surface water is high.

See preceding comments on ground-water potential

Initial Assessment of Site Vulnerability:

from ground water is high.

Main concerns are storm sewers, an auto junkyard southeast of the site, and businesses to the east.

from surface water is high.

Primary concern is runoff from businesses to the east.

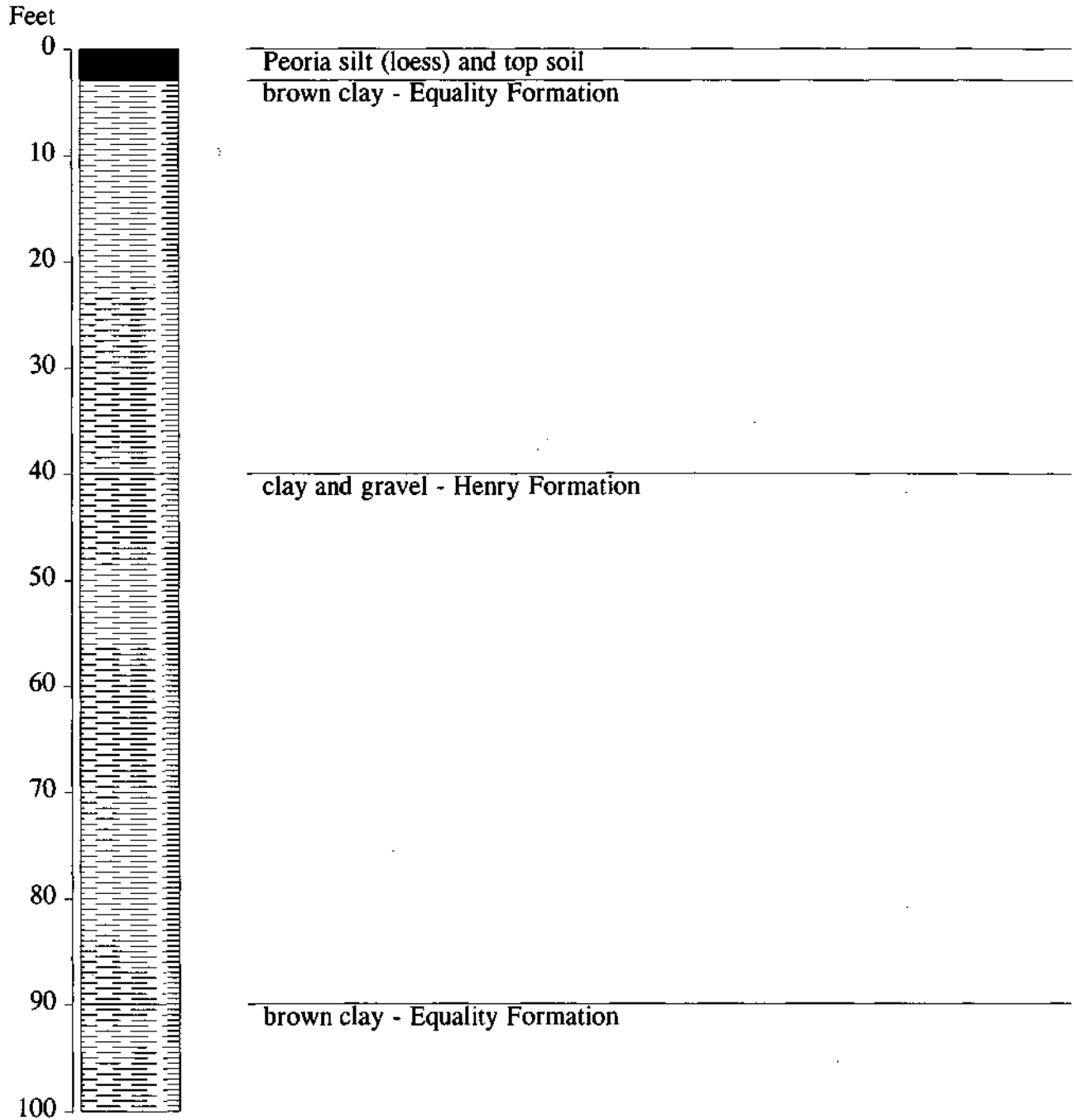
Additional Comments

On Central Avenue east of the preserve, we noted two auto body shops and one heavy equipment dealer. Auto body shops probably store paints and solvents on site. Drums were observed in the rear of one of these shops. Above-ground tanks at the heavy equipment dealer probably contain fuels. Behind another auto body shop, immediately adjacent to the northeast corner of nature preserve is an auto junkyard. The pool at which the chemical data were collected was adjacent to the junkyard and downgradient from it.

Searls Park Prairie Nature Preserve
Winnebago County - 44N 1E Section 9

730

Generalized Stratigraphic Column based on logs in Section 9



Site #: 80 NPC #: 186 Site: Section 8 Woods
 County: Pulaski Location: 8 14S 2E, (S 1/2)
 Acres: 326.8 7.5 Map(s): Karnak
 Visit date: 02/27/96 Field crew: RCB MVM
 Photos taken? No

SAMPLE INFORMATION

Source: pond

from a pond in forested wetlands on the
 floodplain of the Cache River (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/27/96		7.2	16.7	160	100

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	to the south in the Cache River Valley

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	Route 37 west of site
railway		X	on the northeast border

Is there potential impact from runoff? Yes.
from Route 37

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

The site may be in the discharge area of agricultural fields to the south. Local flow direction is from south to north into the Cache River.

surface water

Inputs include floodwaters from the Cache River flooding. A high water mark was noted about 3 feet above land surface on trees. The Cache River is on-site in the north central part of the preserve.

OUTPUTS

ground water

Local discharge is most likely to the Cache River.

surface water

Some surface discharge is possible since the wetland area is immediately adjacent to the Cache River. The Cache flows from west to east along the north border.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial

SOIL ASSOCIATION/SERIES

Karnak, Petrolia, Roby, Sciotoville, Raccoon, Ginat and Weinbach soils are present.

QUATERNARY DEPOSITS

Cahokia Alluvium and Henry Formation sand and gravel outwash sediments are present.

BEDROCK

upper lithology: shale, limestone

supplemental description:

Mississippian Shales (Hannibal Shale?)

depth: 150 - 180 feet

GEOMORPHOLOGY

Site is in Cache River floodplain immediately adjacent to the river and below the low terrace.

TOPOGRAPHY

very flat; Total relief in the preserve is about ten feet.

Potential for Contamination:

of ground water

from sources noted in surface water below

of surface water

Potential sources include railroad tracks and agricultural runoff (nitrates/pesticides) from the fields to the south.

Initial Assessment of Site Vulnerability:

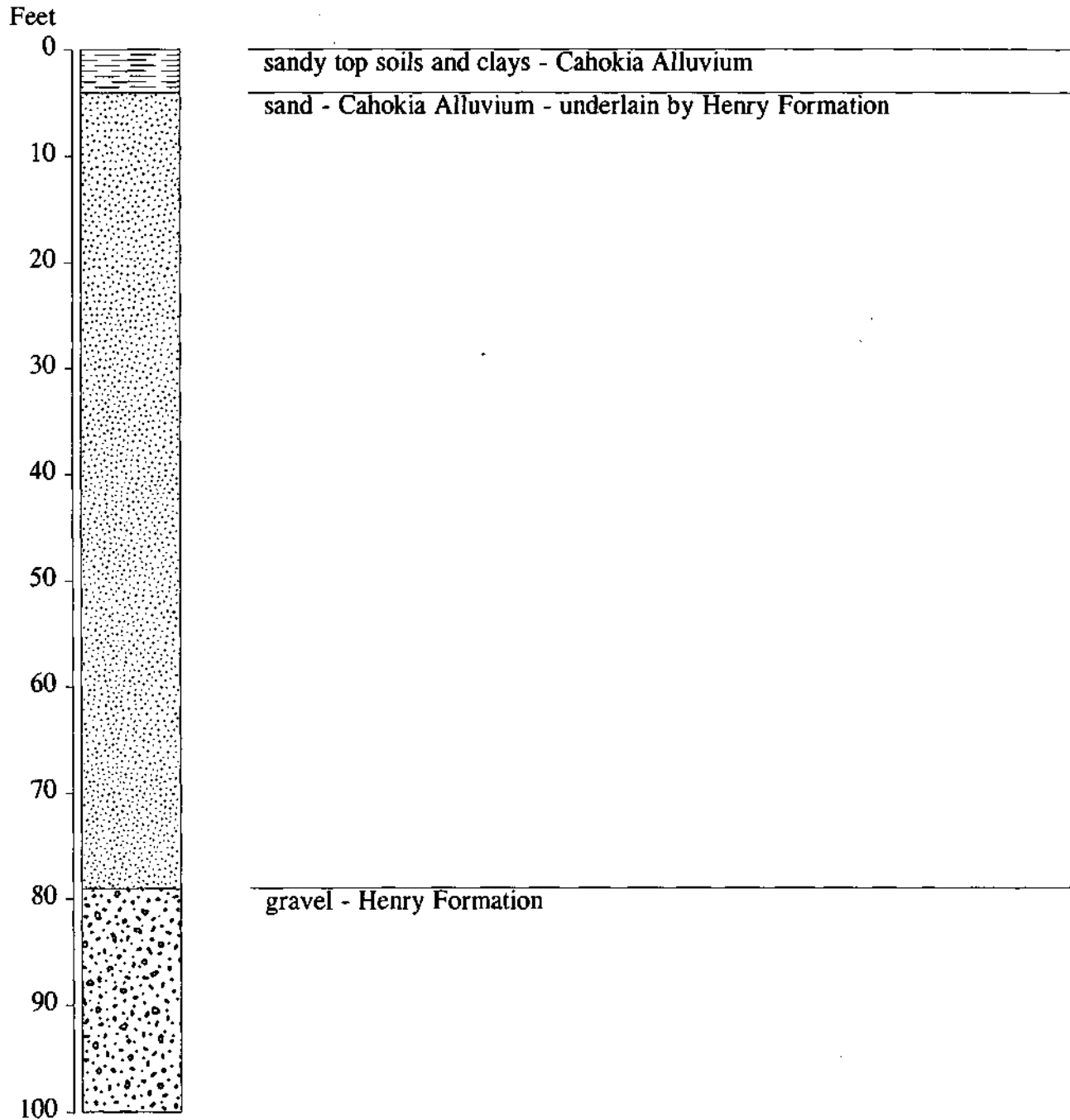
from ground water is moderate.

On-site and off-site geology is sensitive and agriculture is upgradient.

from surface water is low.

Section 8 Woods Nature Preserve
Pulaski County - 14S 2E Sections 8, 9
330

Stratigraphic Column based on log in Section 18, NE NE SE



Site #: 71 NPC #: 133 Site: Shick Shack Sand Pond
 County: Cass Location: 9 17N 11W, (S 1/4)
 Acres: 57.0 7.5 Map(s): Arenzville East
 Visit date: 02/29/96 Field crew: RCB MVM
 Photos taken? No

SAMPLE INFORMATION

Source: pond

in an upland depression on the north side of the site

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	02/29/96		8.1	3.5	180	

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
pasture		X	to the south and east; Much of the area is pasture interspersed with forested land.

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (inferred septic system)		X	few farmsteads near site

NO TRANSPORTATIONAL LAND USES NOTED

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is probably to the north and northwest toward Clear Creek which feeds the Illinois River. Recharge areas include loess/sandy hills.

surface water

Inputs include: 1)overland flow and 2)drainage from ditch in southeast portion of site to the pond in the north-central portion of the site. The pond is a closed depression with high relief on the north side and no visible outlet.

OUTPUTS

ground water

Ground-water flow is to the north and west toward Clear Creek.

surface water

The main pond is a closed depression with no visible outlets. Streams are noted on the topo in the northeast and northwest part of the site.

ALTERATIONS

A logging road runs along the north side of the site.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, eolian

SOIL ASSOCIATION/SERIES

Bloomfield fine sand (53) and Orio sandy loam (200)

QUATERNARY DEPOSITS

Henry Formation (dunes)/Henry Formation (outwash)/Vandalia Diamicton

BEDROCK

upper lithology: limestone, shale

depth: 120 feet

GEOMORPHOLOGY

Upland loess and sand dunes occur, as well as, a closed-depression pond

TOPOGRAPHY

rolling dunes and loess bluff with about 60 feet of relief

Potential for Contamination:

of ground water

Sensitive geology and few sources are present.

of surface water

Some agricultural fields are present upgradient and to the south and southeast (pastureland).

Initial Assessment of Site Vulnerability:

from ground water is low.

See comments for surface water vulnerability.

from surface water is low.

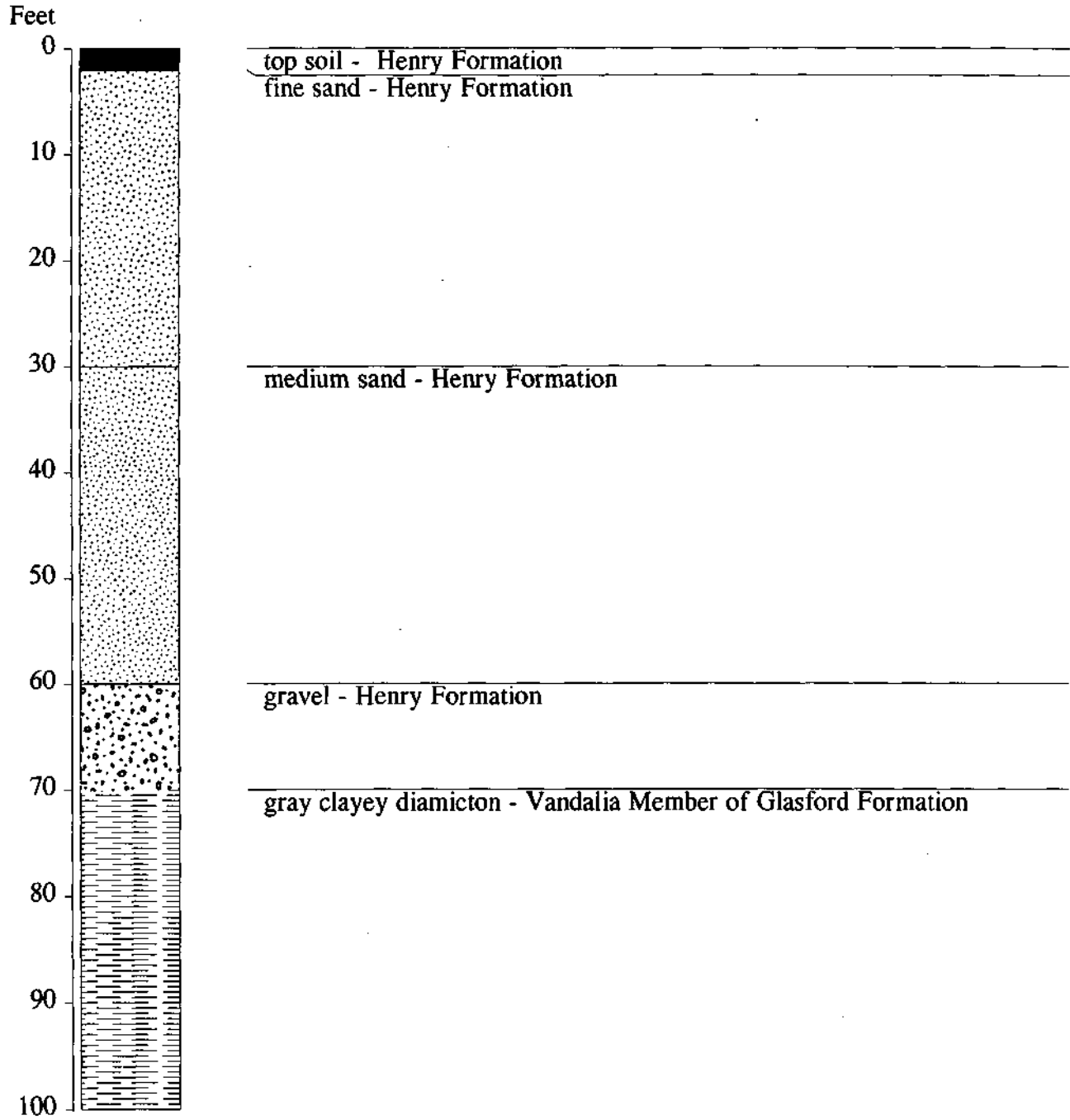
Much of the agricultural land is pasture and is interspersed with forests.

Shick Shack Sand Pond Nature Preserve

Cass County - 17N 11W Section 9

590

Stratigraphic Column based on local logs and information from dedication proposal



Site #: 5 NPC #: 216 Site: Skokie River
 County: Lake Location: 29 44N 12E, 32 44N 12E
 Acres: 100.0 7.5 Map(s): Waukegan
 Visit date: 07/10/96 Field crew: RCB MVM
 Photos taken? Yes Number: 5
 Photo description: golf course, drainage ditches, and scene
 from the southeastern corner

SAMPLE INFORMATION

Source: other

'drainage ditch' - Sample 1 is from the southwest
 portion of the site (noted on topo). The ditch
 flows north to the river.

stream

Sample 2 is from the Skokie River (noted on
 topo).

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/10/96	08:37 A	9.0	16.2	940	108
Sample 2	07/10/96	08:52 A	9.4	16.5	1130	96

PAST ON-SITE LAND USE:

slight pasturing

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	large estates on east side of site; golf course south of north portion and west of south portion

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	at edges of site; none run along site
railway		X	west boundary of north portion; golf course is between south portion and railway

Is there potential impact from runoff? Yes.
very low

RECREATIONAL

	on site	off site	location & description
trail development	x		just hiking throughout site
parking	X		lot at entrance of north portion

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is east to west towards the Skokie River.

surface water

Flow is east to west down the morainal slope toward the Skokie River. Also, drainage ditches and creeks flow toward Skokie River which has been chanelized.

OUTPUTS

ground water

discharge into Skokie river

surface water

discharge of Skokie River

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Mundelein Series on higher ground; Zurich/Wauconda;
Pella in lowlands

QUATERNARY DEPOSITS

Wadsworth Till possibly with colluvium overlying it

GEOMORPHOLOGY

A moraine (of the Valporaiso System) slopes toward the Skokie River.

TOPOGRAPHY

The site has a gentle slope from east (about 700 feet) to west (about 670 feet) toward the Skokie River.

Potential for Contamination:

of ground water

from railroad, golf course and residential area

of surface water

from railroad and golf course

Initial Assessment of Site Vulnerability:

from ground water is low.

Although golf course and railroad are west of site, the presence of thick Wadsworth Diamicton would protect ground water. Higher vulnerability is along south boundary of north portion where the golf course abuts the site. The Skokie River lies at the west boundary of south portion which would intersect potential contamination. The Skokie River would be a local area of discharge.

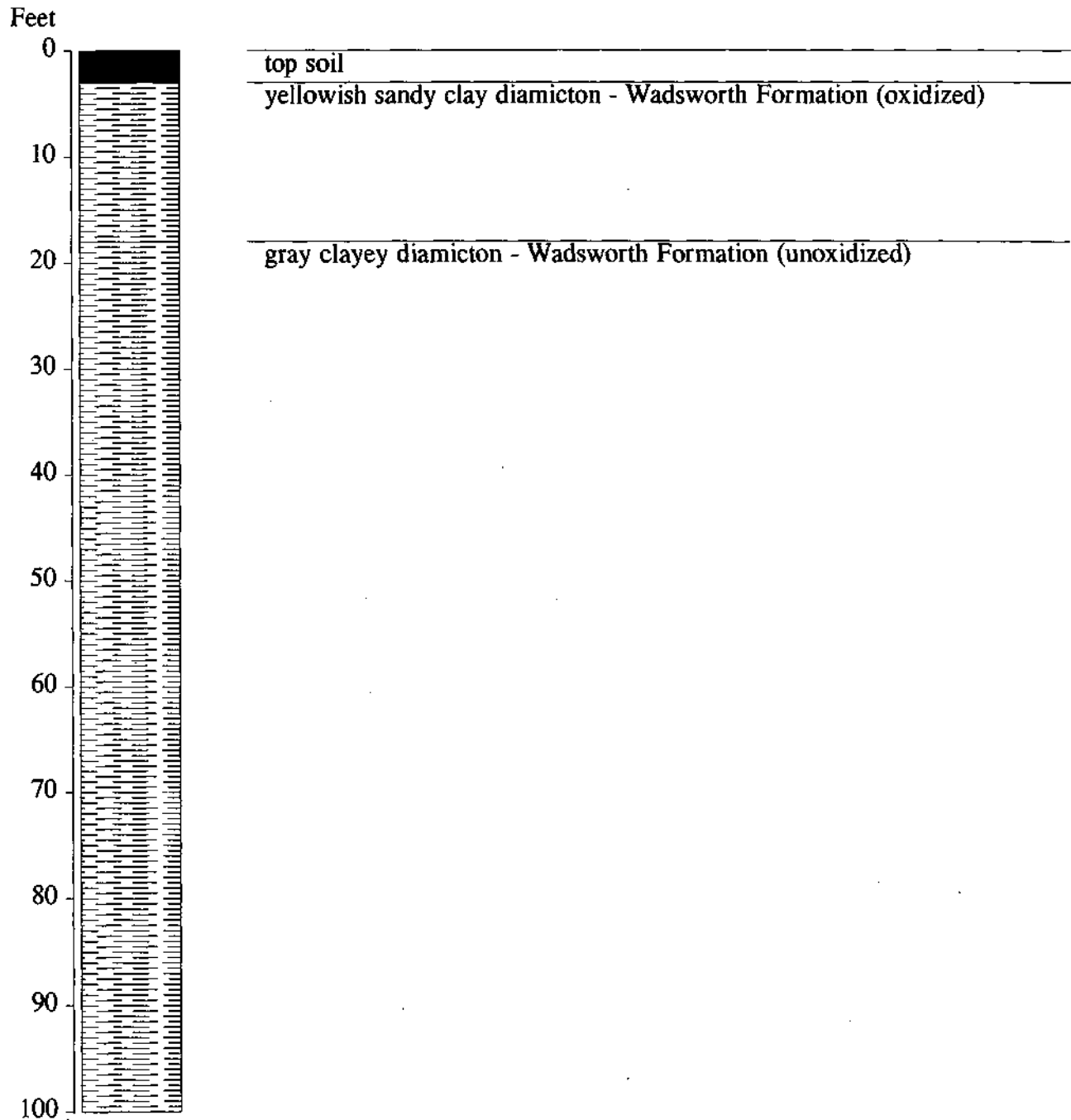
from surface water is low.

The north portion has a buffer between the railroad and the site. The south portion is separated from the railroad and golf course by the Skokie River.

Skokie River Nature Preserve
Lake County - 44N 12E Sections 29, 32

670

Stratigraphic Column based on log in Section 29: 200'S 200'E NW/c, NW NW SE



Site #: 64 NPC #: 76 Site: Spring Bay Fen
 County: Woodford Location: 23 9N 4W, (SW NW)
 Acres: 31.3 7.5 Map(s): Spring Bay
 Visit date: 03/01/96 Field crew: RCB MVM
 Photos taken? Yes Number: 3
 Photo description: seeps, algae, and a view up the seep
 "ditch"

SAMPLE INFORMATION

Source: seep

Sample 1 was taken from water emanating from sand
 and gravel deposits about 20 feet upland and 30
 feet east of the sample location. Ground water
 discharges into fens near the site border on the
 east side. The seep flow forms a small creek
 which flows to the Illinois River.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	03/01/96		8.7	0.9	700	

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
domestic wells		X	south of site (trailer subdivision) and a few residences northwest of site
underground disposal		x	septic systems at the above residences

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	sand and gravel pit and lake along entire east side of site

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
dirt road	x		'path' - around east side of site; minimal impact expected

Is there potential impact from runoff? No.

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Seeps occur at the higher terrace nickpoint on the west side of site. Flow is from east to west which is similar to overland flow in the creek(s). The recharge area includes the sand and gravel pit to the east.

surface water

Illinois River flooding

OUTPUTS

ground water

seeps and possible discharge to Illinois River

surface water

Flow in the seep-fed creek(s) discharges to the Illinois River.

GEOLOGY:

Primary geologic origin(s): lacustrine, fluvial/alluvial

SOIL ASSOCIATION/SERIES

According to a very old soil survey map, mixed loam and silt loam occur on site.

QUATERNARY DEPOSITS

Grayslake Peat/Henry Formation

BEDROCK

upper lithology: shale, limestone
supplemental description:

Modesto and Carbondale Formations

depth: 150 feet

GEOMORPHOLOGY

The west side of the site and the fens are on the Illinois River floodplain. Seeps emanate at the intersection (i.e., nickpoint) of the floodplain with a high terrace of sand and gravel. The east side of the site and the sand and gravel pit are on a low terrace of the Illinois River.

TOPOGRAPHY

Total relief on-site is about 30 to 40 feet from the low terrace slopes to the flat floodplain.

Potential for Contamination:

of ground water

Ground-water discharge from the sand and gravel pit operation is a concern.

of surface water

Illinois River flooding and flood debris is common. On-site flood debris is prevalent.

Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

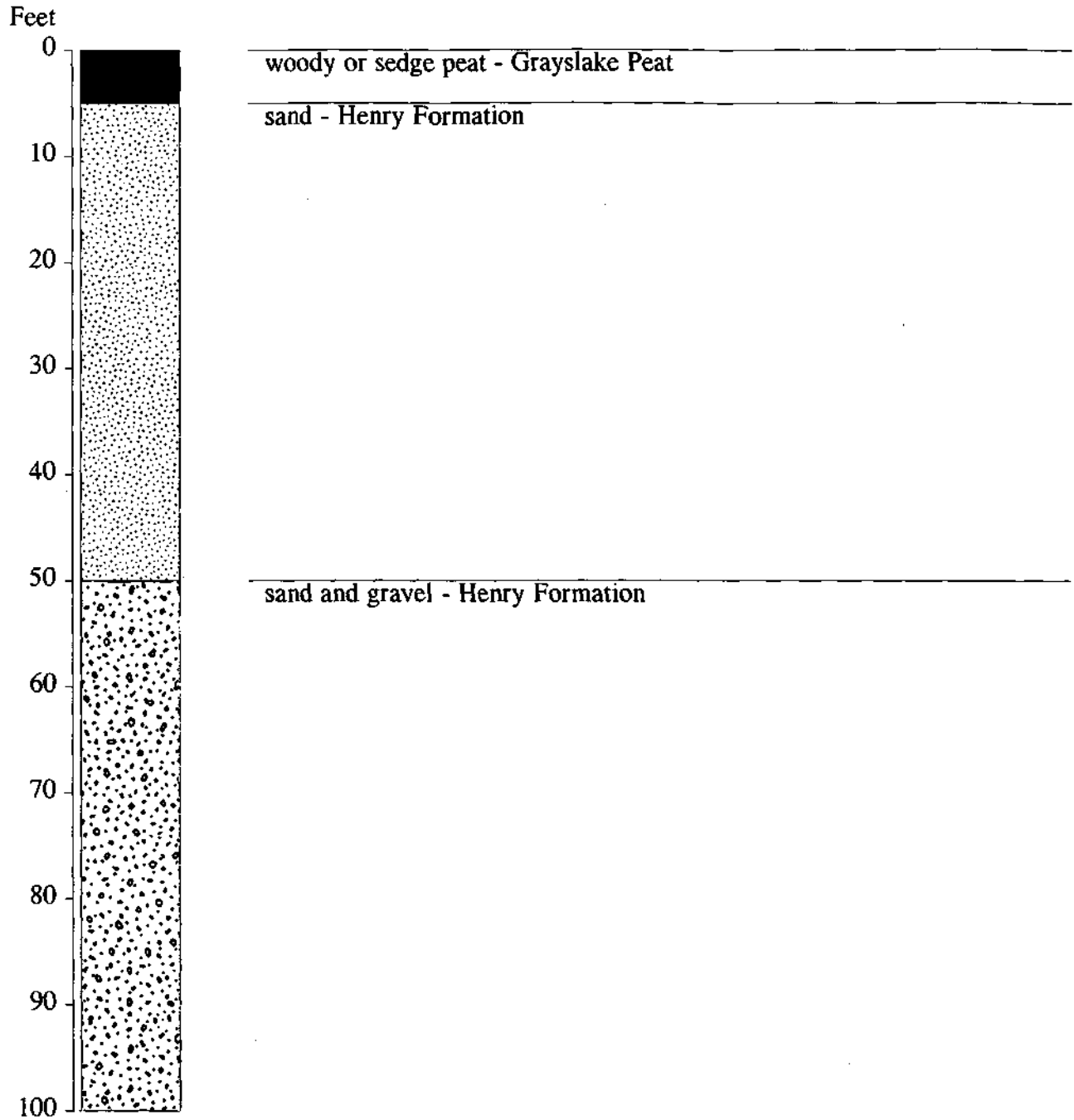
Seep discharge water probably originates from a gravel pit lake which borders the site to the east and separates the active mining operation from the preserve. It is important that the level of the gravel pit lake be maintained.

from surface water is low to moderate.

Surface water flooding is the main concern.

Spring Bay Fen Nature Preserve
Woodford County - 27N 4W Section 23
450

Generalized Stratigraphic Column based on logs in Section 23



Site #: 1 NPC #: 213 Site: Spring Bluff
 County: Lake Location: 3 46N 12E, 10 46N 12E
 Acres: 274.0 7.5 Map(s): Zion
 Visit date: 07/10/96 Field crew: RCB MVM
 Photos taken? Yes Number: 5
 Photo description: panoramic view & others

SAMPLE INFORMATION

Source: wetland
 from a depression in a wetland; noted on topo

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/10/96	10:14 A	8.6	17.2	580	38

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
other		X	'buildings' - east of site associated with North Point Marina

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road	X	X	through the center and to the east of site

Is there potential impact from runoff? Yes.
 Very minimal impact is expected.

RECREATIONAL

	on site	off site	location & description
parking	X		north-central portion

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is from the northwest to the southeast towards
Lake Michigan.

surface water

Inputs include: 1)runoff from moraine uplands to the
west and 2)Spring Creek.

OUTPUTS

ground water

Ground water discharges to Lake Michigan and dune
swales.

surface water

via Spring Creek

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, eolian

SOIL ASSOCIATION/SERIES

Ridges are well-drained Entisols (e.g., Chelsea).

Lowlands are poorly-drained Entisols (e.g., Grundy).

QUATERNARY DEPOSITS

Parkland Formation/Henry Formation/Wadsworth Member

BEDROCK

upper lithology: limestone, dolomite

depth: 125 feet

GЕOMORPHOLOGY

beach ridge complex with a dune-capped ridge

TOPOGRAPHY

gentle slope to Lake Michigan; about 15 feet total relief on-site

Potential for Contamination:

of ground water

from morainal uplands to west and railroad tracks

of surface water

overland flow from morainal upland with houses and railroad tracks

Initial Assessment of Site Vulnerability:

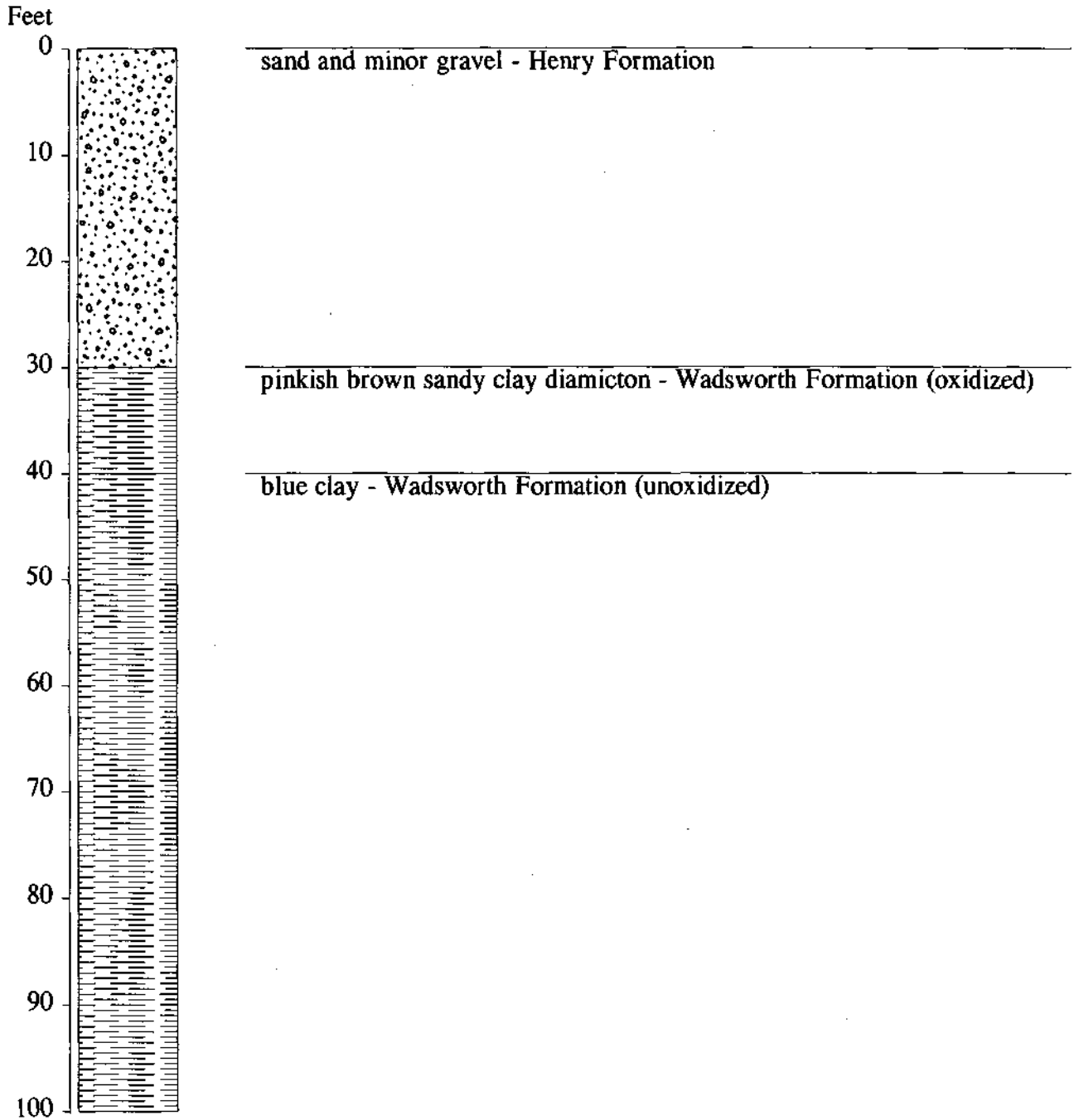
from ground water is low.

Houses to west and railroad tracks might pose a problem in the extreme western portion, but not to the rest of the site. Commercial areas associated with Trident Harbor and North Point Marina are downgradient and pose little threat.

from surface water is low.

Spring Bluff Nature Preserve
Lake County - 46N 12E Sections 3, 10
590

Stratigraphic Column based on log in Section 3: 75'N 50'W, SE/c, NE SE SE



Site #: 28 NPC #: 168 Site: Spring Grove Fen
 County: McHenry Location: 30 46N 9E
 Acres: 33.4 7.5 Map(s): Fox Lake
 Visit date: 05/09/96 Field crew: RAL SCM
 Photos taken? No

SAMPLE INFORMATION

Source: stream
 from spring run/stream at southeast corner of
 preserve (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/09/96	01:03 P	7.8	14.8	950	44

PAST ON-SITE LAND USE:

primarily used for grazing

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	development to east along Linden Lane, to south on top of hill, to northwest near downtown Spring Grove, and to north along Spring Lake Road; minor home development to west along U.S. 12 (mostly businesses)
underground disposal		X	see 'lawns' above
domestic wells		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	gravel pit to southwest (east of Meyer Road)
other		X	'industrial park' - southwest of preserve

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	
paved road		X	
railway		X	south of preserve

Is there potential impact from runoff? Yes.

There is limited potential for runoff from gravel roads. However, runoff may be diverted through the culvert under the railroad (sketch on file).

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

	location
dumping	east part, west edge, and southeast corner of preserve

HYDROLOGY:

INPUTS

ground water

Ground water is more or less at the surface throughout the preserve. It is possible, however, that the water table drops slightly below the surface in the extreme west and southwest corners of the preserve during dry periods. Flow is towards the east and northeast, basically toward Nippersink Creek but may be deflected somewhat downstream. Recharge occurs in the upland area to the south of the preserve. Ground water discharges by seepage and evapotranspiration over most, and probably all, of the preserve.

surface water

The preserve probably does not receive surface water on a continuous basis, as it receives ground water. Surface water almost certainly enters the preserve as runoff from Linden Road, the railroad tracks and U.S. Route 12; this runoff would enter the southeast part of the preserve. Runoff from U.S. 12 enters the nature preserve via culverts under the railroad tracks. Runoff might also enter the west part of the preserve from the slope to the west. Runoff would probably enter the preserve on a relatively sporadic basis and would represent a relatively small proportion of the water entering the preserve.

OUTPUTS

ground water

Most shallow ground water entering the preserve probably discharges within the preserve. Some may, however, exit and flow east or northeast toward the Nippersink.

surface water

Surface water exits the preserve via a channel which passes out of the southeast corner and via spring runs which exit the northeast portion. These conduct water from the preserve to the Nippersink. Note that what is considered as surface water in this discussion is mostly ground water which has discharged through seepage on the preserve.

ALTERATIONS

Principal hydrologic alterations affecting the preserve are roads (Linden Road, U.S. 12) and the railroad enclosing the southeast corner of the preserve. Linden Road may act as a dam, constricting water movement from the southeast half of the preserve and forcing this water to exit via the previously mentioned channel at the extreme southeast corner of the preserve. Road and railroad construction has probably also caused localization of surface water input to the preserve at culvert outlets and adjacent to Linden Road and the railroad tracks.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Hydric soils underlie the entire preserve. These are the "Millington Bottom" and Houghton Muck.

QUATERNARY DEPOSITS

Grayslake Peat overlying Henry Formation overlying Tiskilwa Member.

BEDROCK

upper lithology: dolomite

depth: 150 feet

GEOMORPHOLOGY

Site is in the Nippersink Creek Valley on the southern floodplain. Haeger Member and Henry Formation deposits form the upland to the south of the site.

TOPOGRAPHY

Site is in a flat floodplain, but the land surface rises steeply south of the site where an upland is present.

Potential for Contamination:

of ground water is high.

of surface water is high.

Initial Assessment of Site Vulnerability:

from ground water is high.

Sensitive on-site and off-site geology and potential sources were identified.

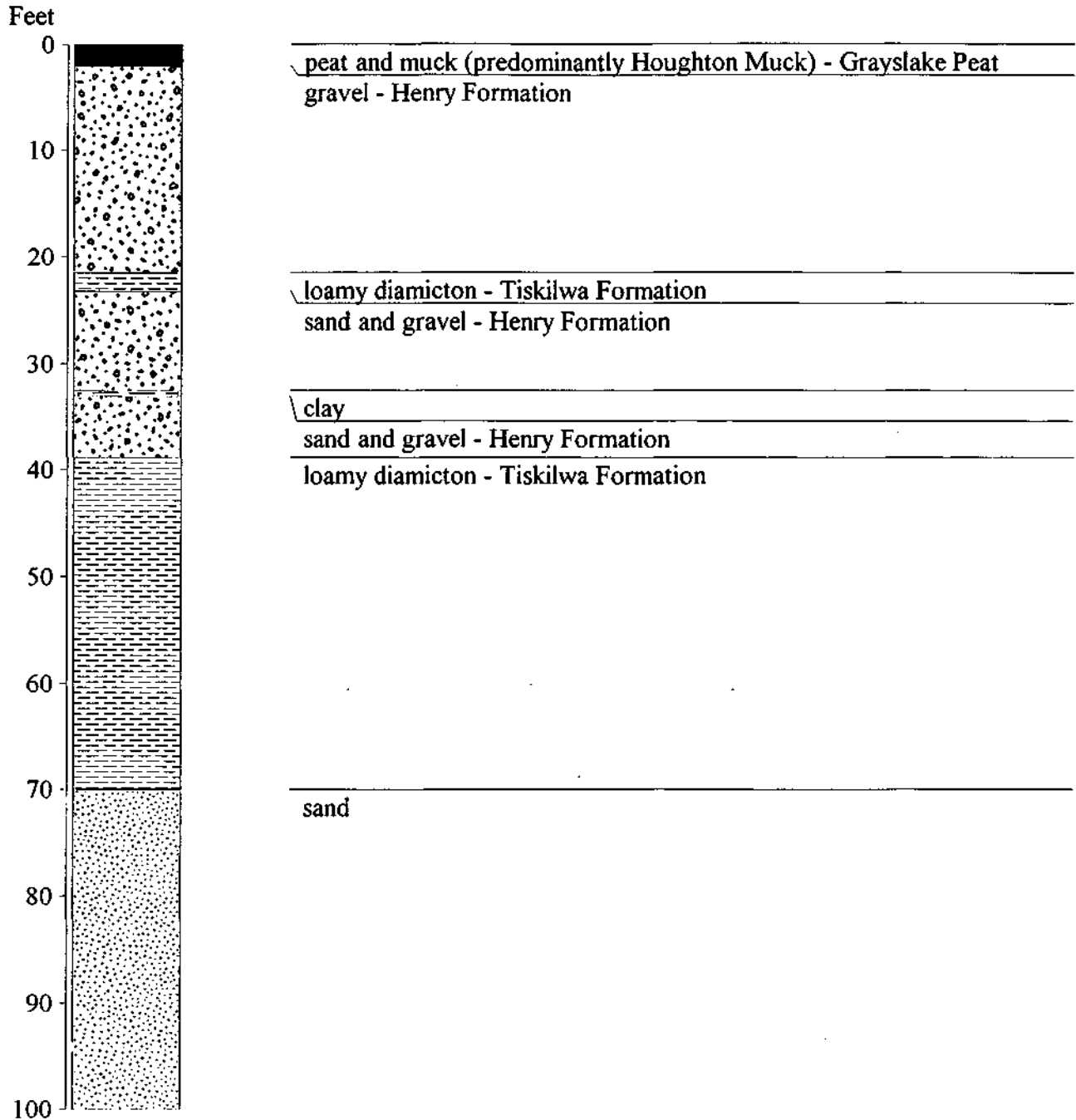
from surface water is high.

Detrimental effects could be profound in the area downstream of culvert.

Spring Grove Fen Nature Preserve
McHenry County - 46N 9E Section 30

751

Generalized Stratigraphic Column based on ISWS/ISGS Well SG-1b and drillers log in
Section 30: SE NW SE



Site #: 35 NPC #: 11 Site: Spring Lake
 County: Cook Location: 5 42N 9E; 6 42N 9E
 Acres: 560.0 7.5 Map(s): Barrington
 Visit date: 07/11/96 Field crew: RCB MVM
 Photos taken? Yes Number: 4
 Photo description: P1: at sample site 1 at outlet creek on
 County Line Road, P2: at sample site 2 at
 creek entering from Bateman Road, and
 P3-4: north-south panoramic view at
 Bateman Road location

SAMPLE INFORMATION

Source: stream

Sample 1 is from a stream on south side of County
 Line Road Bridge (noted on photocopy of topo).
 stream

Sample 2 is from a creek entering site from
 Bateman Road on west side of site about 1/3 mile
 south of County Line Road (noted on photocopy of
 topo).

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/11/96	09:50 A	9.8	20.7	650	179
Sample 2	07/11/96	10:12 A	8.8	17.9	900	212

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	large estates, horse farms and grass areas

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
pasture		X	southeast, south and west of site
livestock		X	horses southeast, south and west of site
above ground disposal/dumping	x		grass and brush on Bateman Road

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	County Line Road bordering site on north side; Sutton Road is 1/8 mile east of site. Bateman Road borders the site on the west side.

Is there potential impact from runoff? Yes.
 particularly from Bateman Road and County Line Road which abut the site side to the west and north respectively

RECREATIONAL

	on site	off site	location & description
parking			gravel turnout was on Bateman Road and County Line Road

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow would be toward Spring Creek which trends south to north through the site.

surface water

via Spring Creek which enters site on southeast side;
via small creek on west side; via small creek on east
side; other inputs as well

OUTPUTS

ground water

discharge in wetland

surface water

via Spring Creek

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Muskego and Houghton Mucks with Drummer in low portions;
Rodman/Andrew, Warsaw, Kane, and Will series in higher
areas

QUATERNARY DEPOSITS

Grayslake Peat over thin Henry Formation over Wadsworth
Diamicton

GEOMORPHOLOGY

intermorainal landscape with Spring Creek floodplain

TOPOGRAPHY

Wetlands and Spring Creek are flat. Higher areas are in
the southwest part of site. Total local relief is about
100 feet.

Potential for Contamination:

of ground water

from paved roads, lawns, pastures, etc.

of surface water

from paved roads, lawns, pastures, etc.

Initial Assessment of Site Vulnerability:

from ground water is moderate.

High sensitivity sand and gravel underlies the site.

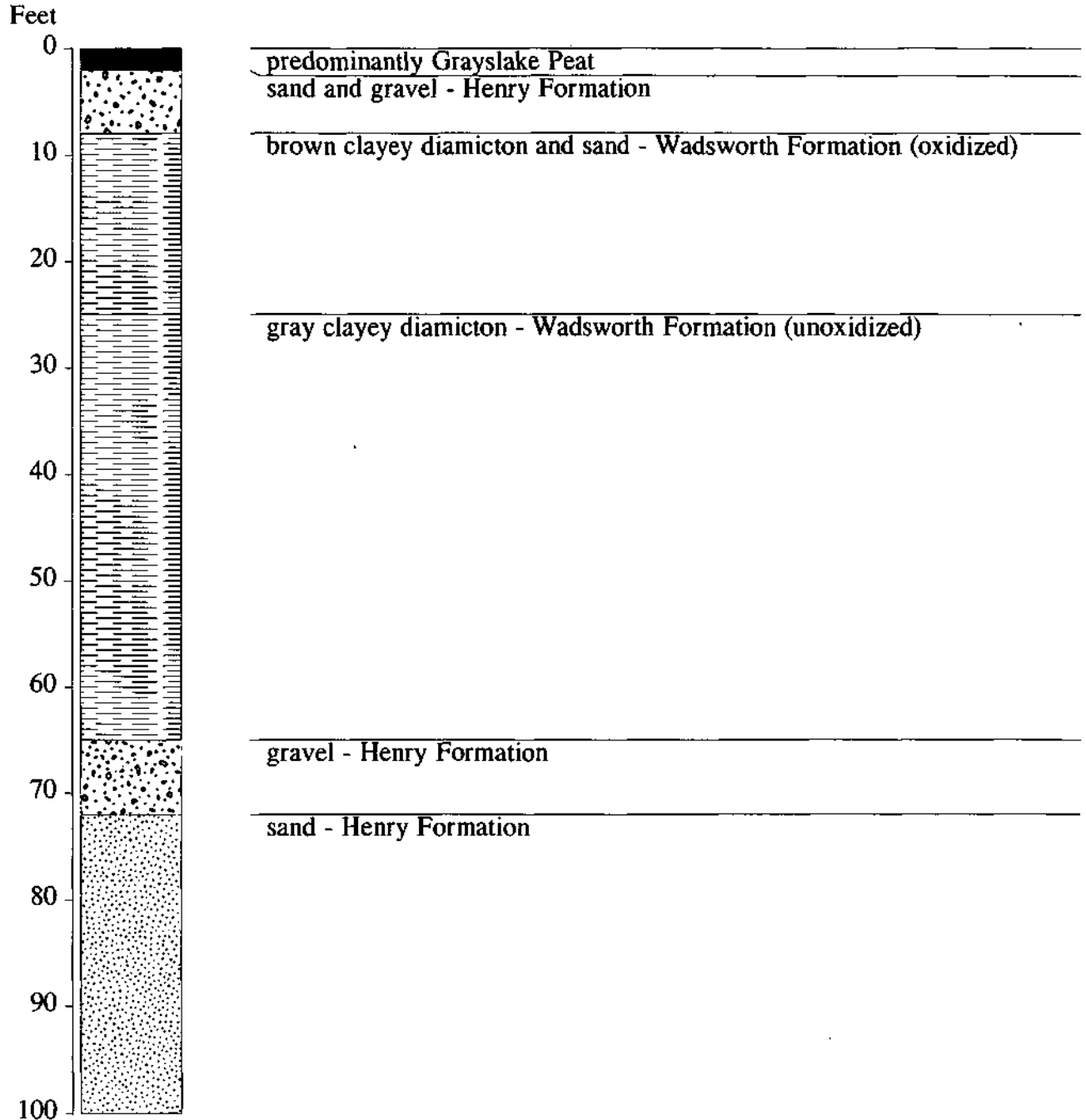
Ranking could be higher (see surface water comments).

from surface water is low to moderate.

Surrounding land use is potentially problematic. The
ranking could be higher because of multiple drainages
into the site and extensive pastureland and estates
potentially causing more problems than were
identified.

Spring Lake Nature Preserve
Cook County - 42N 9E Sections 5, 6
770

Stratigraphic Column based on log in Section 6: NE NW NE



Site #: 42 NPC #: 12 Site: Thornton Lansing Road
 County: Cook Location: 34 36N 14E; 35 36N 14E
 Acres: 440.0 7.5 Map(s): Calumet City
 Visit date: 07/09/96 Field crew: RCB MVM
 Photos taken? Yes Number: 8
 Photo description: N-S panoramic view of cattail/bullrush
 area, and closeup of sedge, and sampling
 location

SAMPLE INFORMATION

Source: other

'creek/ditch' - in the southern portion of the
 site (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/09/96	09:27 A	9.1	17.7	1240	110

PAST ON-SITE LAND USE:

some farming; the east side is tiled

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns	X	X	few residences in northern portion of site; Only driveways are visible and all are overgrown. Some lawns are in southeast Thornton along a small portion of site border.
domestic wells		X	possible abandoned wells - none confirmed

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	Thornton Quarry is one mile northwest of site.

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
dirt road	x	X	north-south along northwest site border
paved road		X	I-394 and Frontage Road (on east border); 183rd Street runs east-west and bisects the site. Thornton Road (on north side); A road along the west side is adjacent to North Creek.

Is there potential impact from runoff? Yes.

Frontage Road and a greenway separates I-394 from the site (sketch on file). No culverts are visible. Roads on the western site border run adjacent to the higher elevations of the site (about 1/4 to 1/2 mile from wetland areas).

RECREATIONAL

	on site	off site	location & description
trail development	x		
parking	X		near the central part of the site
other		X	'forest preserve' - surrounds site except on east side

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow directions vary from southeasterly to northerly.

Inputs appear to be from northeast and east.

surface water

Primary inputs expected are from overland flow. No distinct surface water inputs are evident on the topo.

OUTPUTS

ground water

Local gradients control ground-water discharge from the site. The drainage ditch, North Creek, Thorn Creek, and Wampum Lake all affect local flow directions.

surface water

The primary outlets are 1) drainage of the central portion to North Creek and 2) the drainage ditch in the east part of the site which drains south then southwest to North Creek.

GEOLOGY:

Primary geologic origin(s): glacial, eolian

SOIL ASSOCIATION/SERIES

Watseka, Oakville, Wesley, Gilford, Symerton soils - very sandy

QUATERNARY DEPOSITS

Parkland Sand/Henry Formation/Wadsworth Member

BEDROCK

upper lithology: limestone, dolomite

depth: 50 - 100+ feet

GEOMORPHOLOGY

Subdued beach ridges and dunes are present which are part of the Lake Chicago plain. The site is near the Calumet Beach Ridge.

TOPOGRAPHY

flat; On-site relief is about 30 feet.

Potential for Contamination:

of ground water

of surface water

Initial Assessment of Site Vulnerability:

from ground water is low.

Old wells exist in the northwest corner of the site.

from surface water is low.

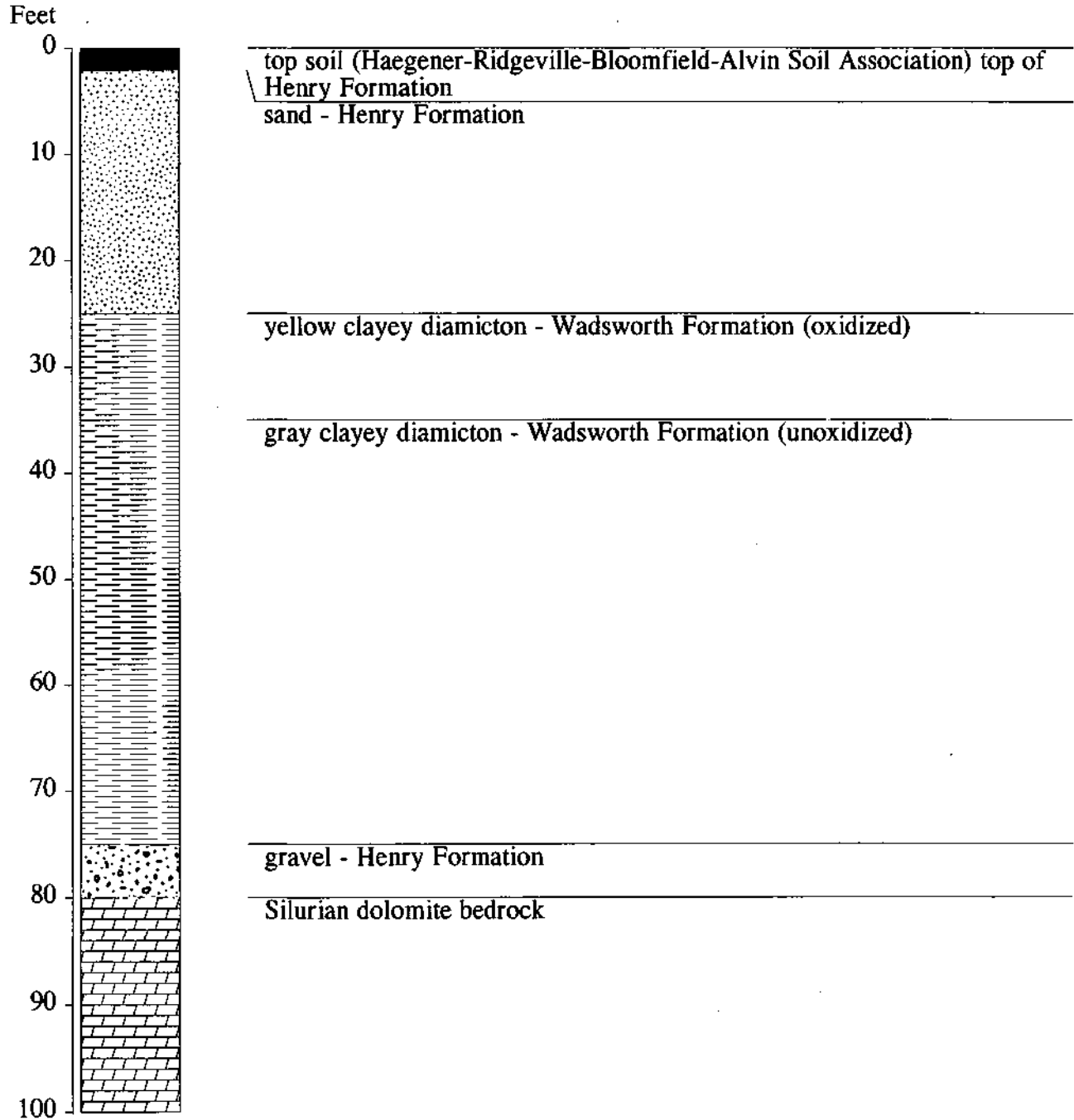
The only impacts expected are from road runoff. The site is surrounded on 3 sides by forest preserve property.

Additional Comments

Ask Mike Miller (MVM) to access the FAP 332 Hazard Report.

Thornton - Lansing Road Nature Preserve
Cook County - 36N 14E Sections 34,35
625

Stratigraphic Column based on logs in Section 35 immediately east of N.P.



Site #: 31 NPC #: 42 Site: Trout Park
 County: Kane Location: 1 41N 8E
 Acres: 26.0 7.5 Map(s): Elgin
 Visit date: 06/21/96 Field crew: RAL HAW
 Photos taken? Yes Number: 5
 Photo description: R7P5: spring
 R7P6: R. Locke sampling north view
 R7P7: R. Locke sampling south view
 R7P8: A. Wehrmann crossing bridge
 R7P9: looking down at Skunk cabbage

SAMPLE INFORMATION

Source: stream

Sample 1 readings were taken just the below upper
 footbridge on the low path (second footbridge
 keeping to right as one ascends from lower
 parking area on Trout Park Blvd.). Location is
 noted on the topo.

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	06/21/96	11:30 A	7.8	14.5	920	59

PAST ON-SITE LAND USE:

The fen has been used as an attraction for decades.
 Water from the springs in the park was bottled for a
 period of time in the early 1900's.

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
pipelines		X	Two Northern Illinois Gas pipelines run along Trout Park Blvd. An IBT underground cable is also present.

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	Paved roads form boundaries on all sides. On the north side is I-90 which actually cuts through a similar environment and separates this nature preserve from the Chicago Junior School property to the north. Other roads are Route 25 (east), Trout Blvd. (south), and Duncan (?) Avenue (west).

Is there potential impact from runoff? Yes.

Runoff and salt spray from I-90 as well as all other streets are a possibility.

RECREATIONAL

	on site	off site	location & description
trail development	x		throughout site
parking	X		
other		X	'baseball park' - immediately east at top of hill which is, in part, a water source for the springs on the hillslope below

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Trout Park is noted for the springs which flow out from the gravelly slopes. Springs are assumed to emit where ground water encounters more impermeable clay layers underlying the gravel. It is estimated that ground water from as far east as Barrington Road may contribute to the springs, but this seems a bit too far. Recharge area could certainly reach east of Route 25 though.

surface water

Springs form rapidly flowing streams which travel west to the Fox River.

OUTPUTS

ground water

Springs/seeps discharge on-site and flow to the west. Off-site ground-water flow may also occur to the west.

surface water

Springs/streams discharge out west side of the fen to the Fox River.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Upland soils: Waupecan, Fox, Rodman, & Dresden soils. Houghton Muck soils are associated with ravine bottoms and lower areas.

QUATERNARY DEPOSITS

Glacial materials are from the Woodfordian Substage of the Wisconsin Stage. The Henry Formation consists of about 40 feet of sand and gravel outwash which overlies 50 feet of Yorkville Diamicton of the Minooka Moraine. Grayslake Peat/Henry Formation/Yorkville/Member.

BEDROCK

upper lithology: limestone, dolomite
supplemental description:

Depth to rock depends on topographic relief. Bedrock uplands are to the east and a bedrock valley is associated with Fox River.

depth: 25 - 100 + feet

GEOMORPHOLOGY

Trout Park Fen occupies the eastern bluff of the Fox River Valley.

TOPOGRAPHY

Topography slopes rapidly from east to west, from the uplands to the Fox River Floodplain. The top of the park is at an elevation of 800 feet while lower portions of the fen are at 740 feet. This is a 60 foot drop in less than 1000 feet (greater than 6% slope).

Potential for Contamination:

of ground water is high.

of surface water is moderate.

Initial Assessment of Site Vulnerability:

from ground water is high.

Main problems are infiltration of road runoff and a heavily developed area upgradient of the site.

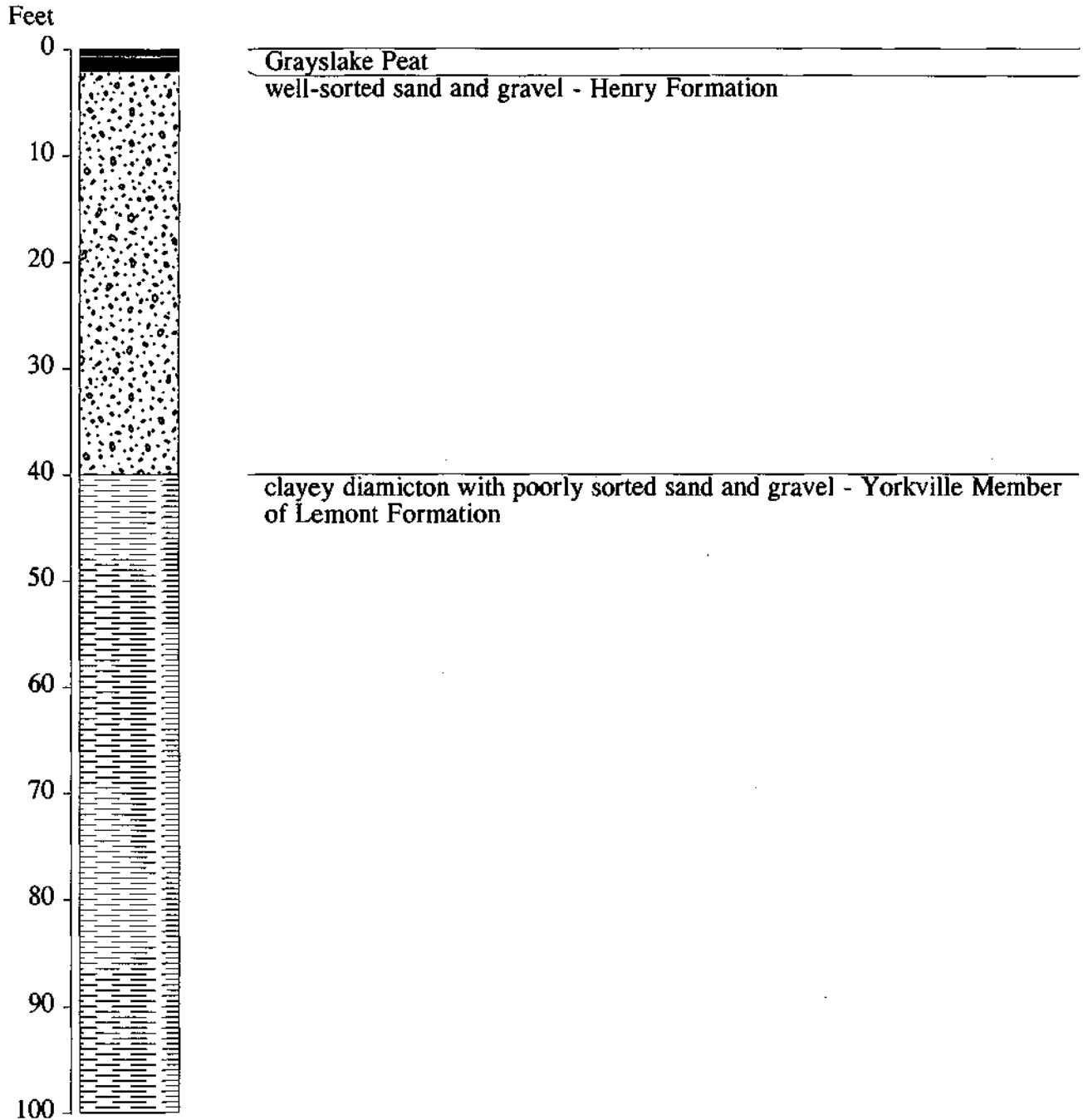
Geology is sensitive both on- and off-site.

from surface water is moderate.

Road runoff may be a problem.

Trout Park Nature Preserve
Kane County - 41N 8E Section 1
750

Stratigraphic Column based on geologic information provided in the dedication proposal



Site #: 51 NPC #: 212 Site: Tucker-Millington Fen
 County: Kendall Location: 30 36N 6E
 Acres: 4.5 7.5 Map(s): Newark
 Visit date: 04/18/96 Field crew: RAL DCB
 Photos taken? Yes Number: 2
 Photo description: indicated on topo as R4P12 (showing ditch
 and recent grading along railroad) and
 R4P13 (marsh along railroad near sample
 site)

SAMPLE INFORMATION

Source: other

'marshy area' - just off-site on Burlington
 Northern Railroad right of way (noted on topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	04/18/96	05:30 P	7.9	15.0	770	70

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	at Tucker residence and two other homes to southeast of preserve
domestic wells		X	Well in the basement of Tucker residence provides drinking water under natural gradient (i.e., it has no pump). House is upgradient from the seeps in the preserve (well impact?) Wells are also at other residences to the southeast.

underground
disposal

X Septic lines at the Tucker residence run southeast of the house. A 6 to 8 foot deep drainage well handles laundry discharge and is located north of the house. Septic systems are also associated with other residences.

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	possibly to the southeast and east
pasture		X	to the southeast
livestock		X	horses and donkeys to the southeast

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road	x		gravel drive southwest of Tucker residence
paved road		X	Fox River Road to north
railway		X	Burlington-Northern to the northwest

Is there potential impact from runoff? Yes.
from both the gravel drive and Fox River Road

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

location
dumping Railroad ties have been discarded into the marshy area southeast of the tracks. Debris was also seen along south ditch of Fox River Road.

HYDROLOGY:

INPUTS

ground water

Flow is from southeast through sands and gravels which are layered with finer-grained materials.

surface water

Inputs include: a spring run entering the preserve from the southeast (just southwest of Tucker residence) and a road ditch (spring run?) along the north boundary of the preserve and Fox River Road. The two surface water inputs converge on the northwest corner of the preserve near the intersection of the railroad and Fox River Road.

OUTPUTS

ground water

Outputs include: seeps to the northwest of the Tucker residence, seep/marsh northwest of gravel drive, the fen's northwest slope (just southeast of railroad) and seeps/fen discharges to the area southeast of railroad.

surface water

Outputs are in the northwest into a culvert under the railroad and in the southwest into Clear Creek which flows to southwest.

ALTERATIONS

Roadbed maintenance and ditching along the east side of the railroad increases discharge towards the southwest along the railroad.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Millington and Hennepin silt loams on slopes; Fox

QUATERNARY DEPOSITS

Glacial materials are from the Woodfordian Substage of the Wisconsin Stage. Cahokia Alluvium/Henry Formation/Yorkville Diamicton/Henry Formation/St. Peter Sandstone

BEDROCK

upper lithology: sandstone
supplemental description:

St. Peter Sandstone

depth: 60 - 95 feet

GEOMORPHOLOGY

The fen lies near the Ransom Moraine. Clear Creek flows on the south side. The Fox River is to the northwest. Neither stream directly influences the hydrology of the fen. Higher quality fen is located northwest of a small hill by a gravel drive. Seeps occur near the base of a hill comprised of glacial materials.

TOPOGRAPHY

Total relief in the nature preserve is about 40 feet. Areas may have been landscaped for development. General slope direction is to the northwest.

Potential for Contamination:

of ground water is low to moderate.

of surface water is moderate.

Primary concerns are from runoff from railroad and Fox River Road into respective ditches adjacent to preserve and from pastures to the south.

Initial Assessment of Site Vulnerability:

from ground water is moderate.

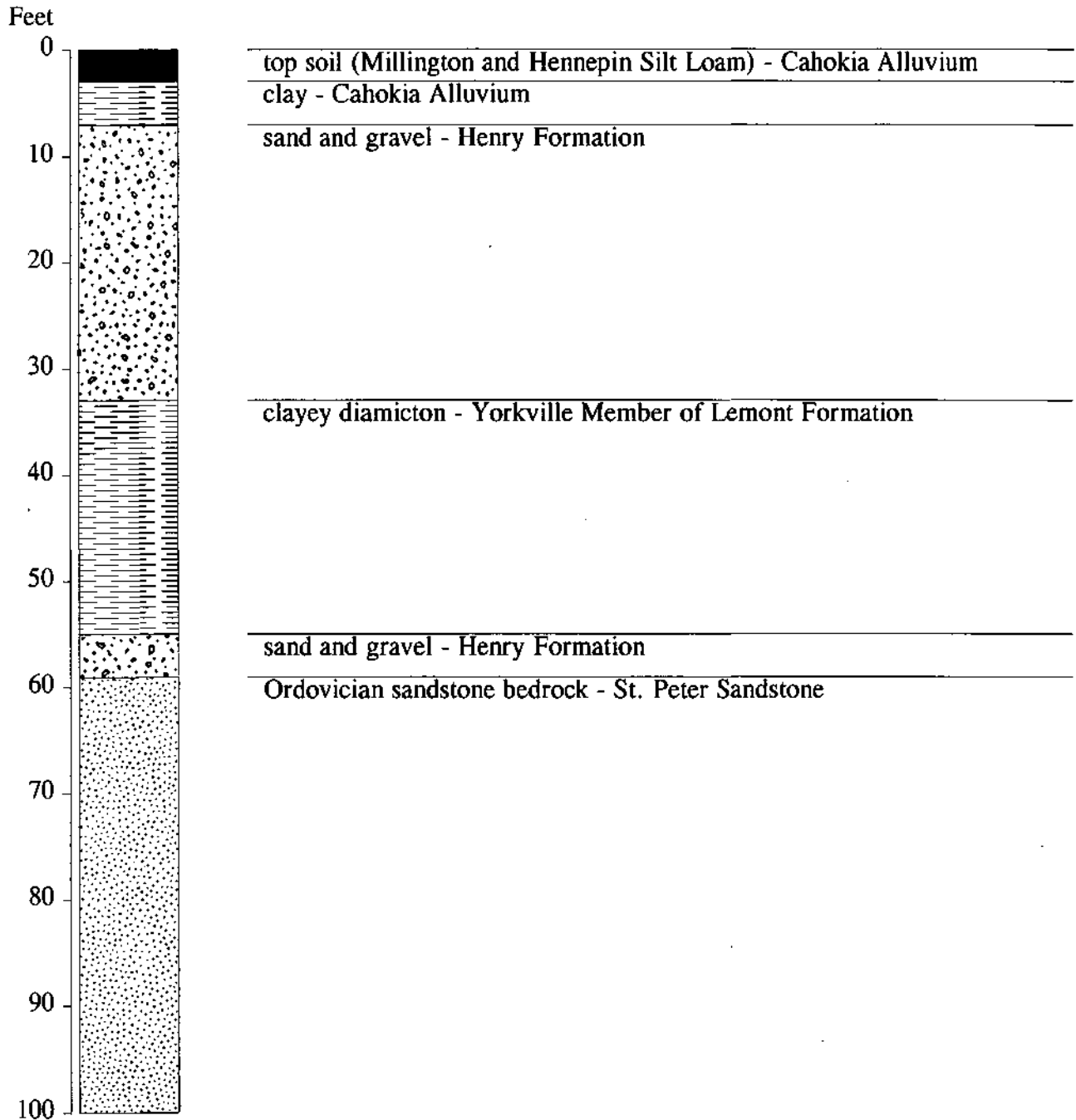
Primary concern is laundry discharge from Tucker residence.

from surface water is low to moderate.

Indications of herbicide applications were noted on the sides of railroad tracks. Primary concerns are grazing areas south of the nature preserve, septic system at Tucker residence, and activities of railroad maintenance. Limited sources of threat were noted. Primary contamination would occur in downgradient areas of the seep/fen.

Tucker - Millington Fen Nature Preserve
Kendall County - 36N 6E Section 30
560

Stratigraphic Column based on log in Section 30: NE NW SW



Site #: 14 NPC #: 167 Site: Turner Lake Fen
 County: Lake Location: 21 46N 9E; 28 46N 9E
 Acres: 95.0 7.5 Map(s): Fox Lake
 Visit date: 05/09/96 Field crew: RAL SCM
 Photos taken? No

SAMPLE INFORMATION

Source: wetland
 in sedge meadow depression on southeast edge of
 nature preserve; noted on topo

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/09/96	09:45 A	7.2	8.0	690	20

PAST ON-SITE LAND USE:

Some pheasant hunting occurred in parts of the preserve.
 Old gravel pit (off-site) to southwest is being
 subdivided and developed.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	in subdivision to south and southwest of nature preserve.
domestic wells underground		X	see 'lawns' above
disposal		X	see 'lawns' above

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	corn southwest of preserve

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (inferred septic system)		X	mostly to west between landing strip and preserve

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	to west
paved road		X	to east

Is there potential impact from runoff? Yes.

from park road in the south; sketch on file

RECREATIONAL

	on site	off site	location & description
outhouses		X	
other		X	camping to east and roads to south and east

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Ground-water flow is basically from west to east or southwest to northeast with shallow ground-water discharge occurring over most or all of the site via evapotranspiration and seepage. Water then drains into Turner Lake, which is in turn connected via a channel to Fox Lake. Depth to ground water ranges from 0 feet (over most of site, where discharge is occurring) to perhaps 20 or 30 feet on the hills and ridges along the western margins of the preserve. Recharge is predominantly in the uplands to the west with additional recharge from uplands to the south of the preserve.

surface water

Surface-water input is minor and sporadic in comparison to ground-water input. Principal surface-water inputs include runoff from Chain O' Lakes access road and associated campground access roads around the southeast margin of the preserve. One culvert was observed which conducts runoff from the main Chain O' Lakes access road into the fen a short distance (about 300 feet) from the border of the preserve. This is along the south border. Other surface-water inputs probably include runoff from the slopes to the west and south, though the quad map does not show well-developed gullies in this slope.

OUTPUTS

ground water

There is probably very little shallow ground-water output from the site as most or all ground water entering the site discharges via seepage or evapotranspiration.

surface water

Surface water exits the nature preserve via eastward or northeastward flow through the fen area and into Turner Lake.

ALTERATIONS

The quad map shows an old configuration of channels in the southeast portion of the preserve that likely originated through human means. Given that the fen, together with these channels, is at approximately the elevation of Fox Lake, the channels are probably not effective at conducting water away from the preserve. The only other alteration of note is the construction of roads, with associated ditching/culverts around the southeast margin of the preserve. This would have the effect of introducing somewhat more surface water to the preserve than would naturally occur. The extra contribution of surface water is probably not significant, however.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Within the preserve, the Houghton Muck predominates in the wetlands. The Rodman gravelly loam occurs on hills at the northeast and southwest margins of the preserve, and the Fox Loam is mapped on a slope at the west-central margin.

QUATERNARY DEPOSITS

Grayslake Peat/Henry/Wadsworth Diamicton

BEDROCK

depth: 100 + feet

GEOMORPHOLOGY

kettle lake (with about 100 feet of relief)

TOPOGRAPHY

A steep valley wall is to the west of site. East of the site is flat (with less than 20 feet of relief) and connects to Grass Lake.

Potential for Contamination:

of ground water is moderate to high.

of surface water is moderate.

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

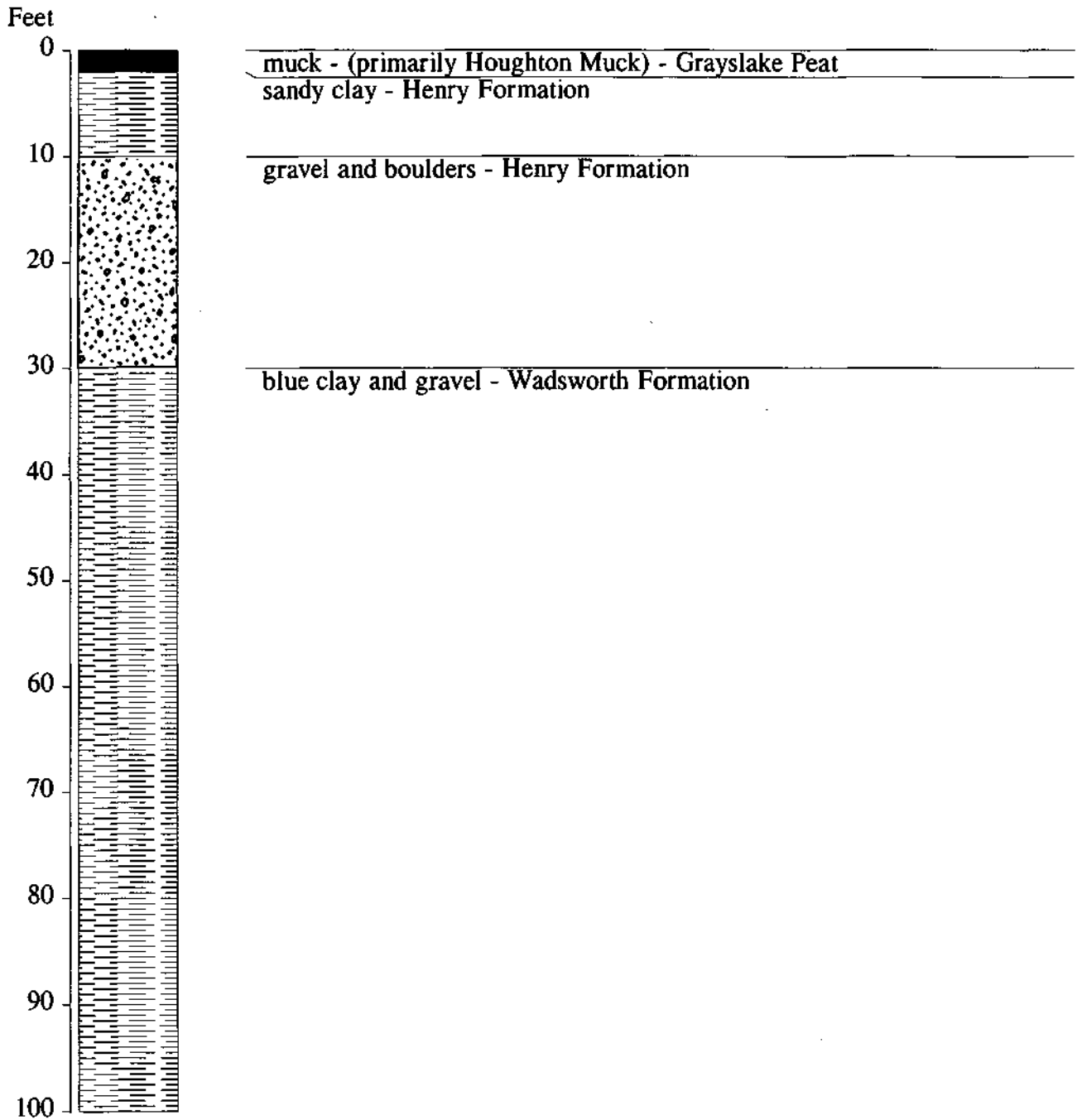
Sensitive geology exists on and off site. Potential sources are upgradient.

from surface water is low to moderate.

Surface water seems to be a minor input.

Turner Lake Fen Nature Preserve
Lake County - 46N 9E Sections 21, 28
750

Stratigraphic Column based on log in Section 21: NE 1/4 SW 1/4



Site #: 11 NPC #: 25 Site: Volo Bog
 County: Lake Location: 28 45N 9E
 Acres: 186.0 7.5 Map(s): Wauconda
 Visit date: 05/10/96 Field crew: RAL SCM
 Photos taken? No

NO SAMPLES TAKEN

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	homes to north of nature preserve; trailer park and subdivision to south of Sullivan Lake Road.
domestic wells		x	see 'lawns' above
underground disposal		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	Spruce Lake Sand & Gravel pit to east
other		X	'golf course' - south of preserve and east of Sullivan Lake; 'heavy machinery yard' - east of golf course; many fuel storage tanks noted (> 8-9); bulldozers etc. 'kennel' - northeast of preserve on Sullivan Lake Rd.

AGRICULTURAL

	on site	off site	location & description
row crops		X	to east, southeast and west

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (infers septic system)		X	along Sullivan Lake Rd. east of machinery yard

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	

Is there potential impact from runoff? Yes.
primarily from Sullivan Lake Rd.; possibly from
Brandenburg Rd. in north (sketch on file)

NO RECREATIONAL LAND USES NOTED

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Shallow ground-water inputs consist of subsurface flow from all directions except the southwest. Ground water is at the surface in the bog area, which occupies most of the preserve. On the slopes at the northwest margin of the preserve, ground water may be at a depth of 20 feet or so. Local shallow ground-water flow is complex, but essentially flow lines converge on Volo Bog from all directions except for a small part of the southwest margin of the preserve. At Volo Bog, ground water discharges by seepage and evapotranspiration.

surface water

The quad map does not show any perennial or intermittent streams entering the preserve. The bog itself spreads outside of the preserve. Other surface-water inputs include runoff from the slopes which almost completely encircle the preserve (except to the southwest). There is comparatively little development around Volo Bog which would have the effect of increasing runoff into the preserve. Note: the lake south of Sullivan Lake Rd. is south of the preserve. This may contribute water through a culvert into the bog.

OUTPUTS

ground water

Ground water discharges over almost the entire preserve. Shallow ground-water outputs from the preserve probably don't exist.

surface water

Principal surface-water output is the creek draining Volo Bog to the southwest. This empties into Sullivan Lake.

ALTERATIONS

Very few significant alterations, if any. Runoff into the preserve may have been increased by development along Sullivan Lake Road. Significant suburban development is distant enough so that runoff effects would be minimal.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Houghton Peat and Houghton Muck are present over most of preserve. Fox Loam occurs on a small hill in the center of the bog.

QUATERNARY DEPOSITS

Grayslake Peat/Equality Formation/Henry Formation

BEDROCK

upper lithology: dolomite

depth: 140 feet

GEOMORPHOLOGY

kettle lake

TOPOGRAPHY

kame and kettle topography; steep slopes on kames and flat in the lowlands; less than 10 feet of relief within the preserve

Potential for Contamination:
of ground water is high.

of surface water is moderate to high.

Initial Assessment of Site Vulnerability:
from ground water is high.

The primary concern is a heavy machinery yard south of Sullivan Road.

from surface water is moderate to high.

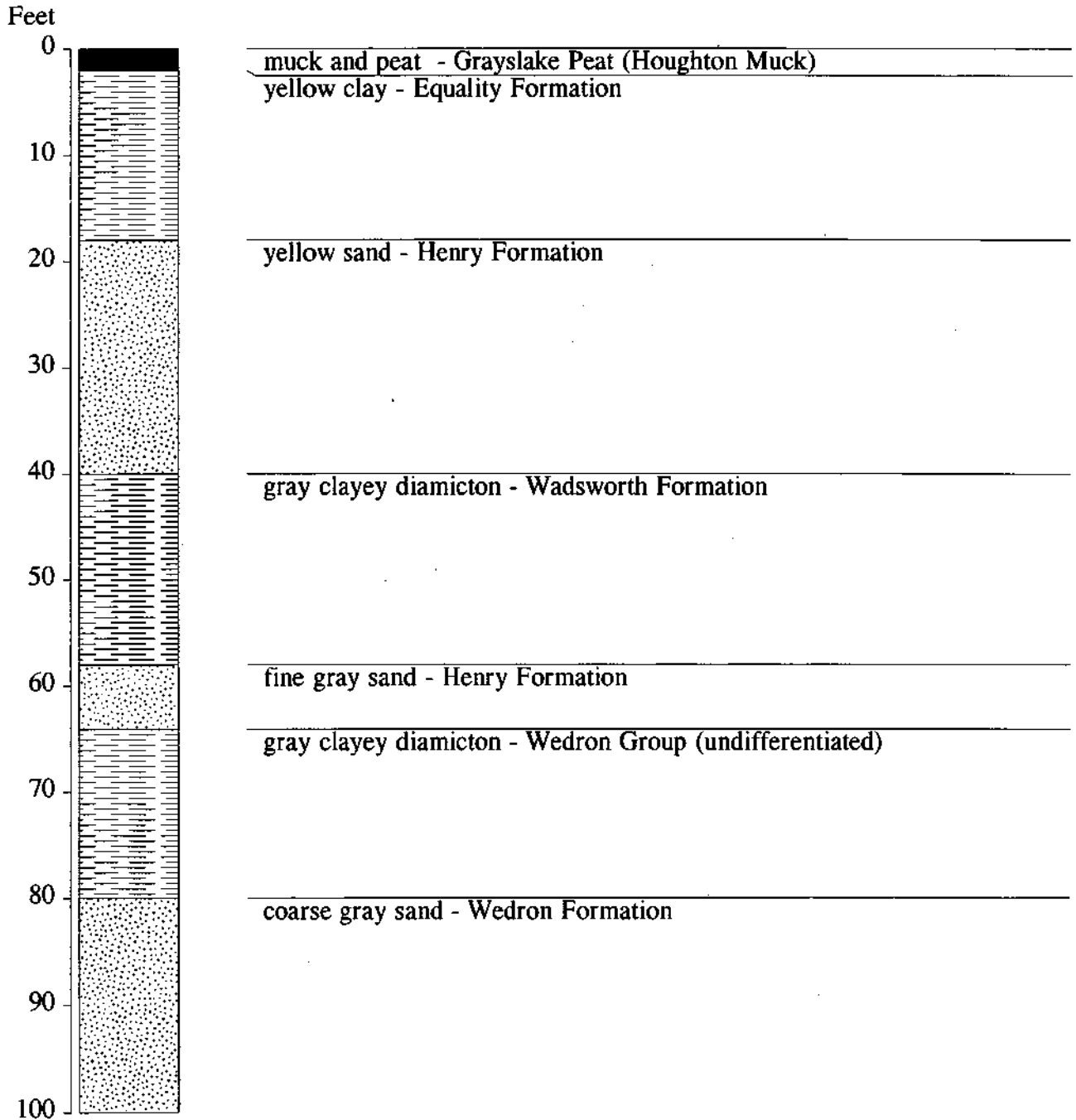
The primary concern is a heavy machinery yard south of Sullivan Road.

Additional Comments

Influence of the gravel pit to the northeast is unknown.

Volo Bog Nature Preserve
Lake County - 45N 9E Section 28
750

Stratigraphic Column based on log in Section 28: 100'N 400'E SW/c, NW SW NE



Site #: 3 NPC #: 83 Site: Wadsworth Prairie
 County: Lake Location: 22 46N HE ; 27 46N HE
 Acres: 267.0 7.5 Map(s): Wadsworth
 Visit date: 07/10/96 Field crew: RCB MVM
 Photos taken? Yes Number: 4
 Photo description: north, south, railroad & site of sample

SAMPLE INFORMATION

Source: wetland
 noted on topo

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	07/10/96	02:30 P	9.4	28.4	830	65

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
stockpiles			
building materials		X	south of site
other		X	'Campanella Construction Co.' - just south of site, but downgradient

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	south of site: from Wadsworth Rd. to site border
railway		X	borders site on east side

Is there potential impact from runoff? Yes.
Impacts are expected to be very minimal to
non-existent.

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

location
flood debris possible next to Des Plaines River

HYDROLOGY:

INPUTS

ground water

Flow is expected to be from east to west.

surface water

An intermittent drainageway enters the site from the
southeast. Surface runoff may enter from the moraine
slope to the east. Flooding by the Des Plaines River
may occur.

OUTPUTS

ground water

Discharge occurs in wetlands, to the river, and to
other portions of the Des Plaines River Valley.

surface water

Northwest and southwest site corners abut the Des
Plaines River. During flooding, water flows through
site.

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Silty-clay loams and silt loams with moderate hydraulic conductivity are present. Dresden and Fox Series (sandy) are present with Sawmill alluvial soils in lower areas.

QUATERNARY DEPOSITS

Cahokia Alluvium and Henry Formation (about 30 feet thick) overlying Wadsworth Till

BEDROCK

depth: about 180 feet

GEOMORPHOLOGY

This site is in the Des Plaines River floodplain and may be on a low terrace.

TOPOGRAPHY

flat (less than 5 feet of relief)

Potential for Contamination:

of ground water

from industry at southeastern corner of site and from railroad tracks

of surface water

same as 'of ground water' above

Initial Assessment of Site Vulnerability:

from ground water is moderate.

Railroad tracks are to east and upgradient. Sensitive geology (sand and gravel) underlies the site.

from surface water is low to moderate.

Potential sources are the railroad tracks and a commercial site.

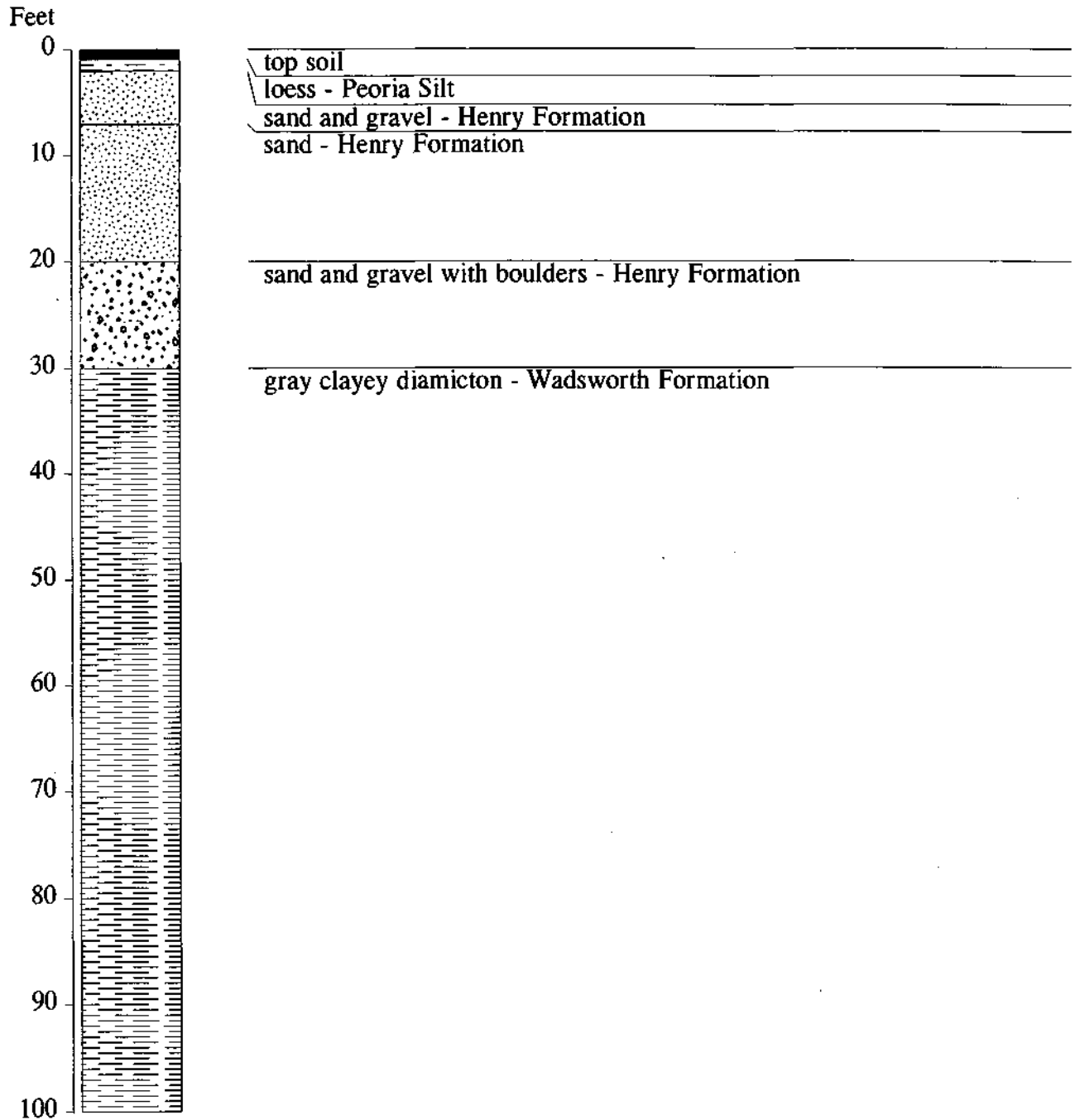
Additional Comments

ISGS has monitoring wells (nearby?) in conjunction with Illinois Natural History Survey vegetation studies.

Wadsworth Prairie Nature Preserve
Lake County - 46N HE Sections 22, 27

665

Stratigraphic Column based on log in Section 27: 330'S 275'E NW/c NW NE NW



Site #: 9 NPC #: 26 Site: Wauconda Bog
 County: Lake Location: 36 44N 9E
 Acres: 67.0 7.5 Map(s): Wauconda
 Visit date: 06/19/96 Field crew: RAL HAW
 Photos taken? No

SAMPLE INFORMATION

Source: other
 from culvert inflow feeding nature preserve;
 noted on topo

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	06/19/96	03:30 P	7.6	20.0	615	46

PAST ON-SITE LAND USE:

Not much prior use expected for the center of the preserve. Periphery has disturbance as noted in dedication proposal vegetation map. Dedication proposal (copy in the site file) is incomplete and additional disturbances may be noted in the full proposal.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	north, west, south and east of preserve
domestic wells		X	primarily west, south and east of preserve
underground disposal		X	same as 'domestic wells' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
other		X	'culvert' - south side of preserve where adjacent to road; flow is from south to north through culvert into preserve

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	surrounding preserve; primarily residential streets

Is there potential impact from runoff? Yes.
After a recent 5 inch rain, significant inflow was seen at the south edge of the preserve where the chemical measurements were taken. A lot to the south of the preserve remains undeveloped because of surface runoff and persistently wet soils. The extent of the area which contributes runoff is not known. (sketch on file)

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

	location
flood debris	landscaping bark from recent flooding at south side of preserve

HYDROLOGY:

INPUTS

ground water

Local inflows come from adjacent hills to east and south; possibly to north. A ground-water divide may exist near Rt. 22 just south of preserve. Regional flow may be primarily to the west to the Fox River although a northward component may be present.

surface water

Inputs include: culvert at south edge of preserve as described in industrial section and runoff from uplands

OUTPUTS

ground water

regional flow to west (possibly with a northward component); seepage to surface water in the marsh

surface water

flow through marsh off of preserve property in northeast

ALTERATIONS

culvert as noted above

GEOLOGY:

Primary geologic origin(s): fluvial/alluvial, glacial

SOIL ASSOCIATION/SERIES

Morely-Markham-Houghton Association; See dedication proposal for additional information

QUATERNARY DEPOSITS

153+ feet of Wisconsinan deposits with Wadsworth present locally (noted in dedication proposal) - Grayslake Peat/Equality Formation/Henry Sand & Gravel/ diamicton

BEDROCK

upper lithology: dolomite

depth: 153 + feet

GEOMORPHOLOGY

The bog is located in a glacial depression which drains to the northeast towards Bangs Lake.

TOPOGRAPHY

less than 10 feet in preserve; about 40 feet of relief adjacent to preserve on the uplands

Potential for Contamination:

of ground water is moderate to high.

of surface water is high.

Initial Assessment of Site Vulnerability:

from ground water is moderate to high.

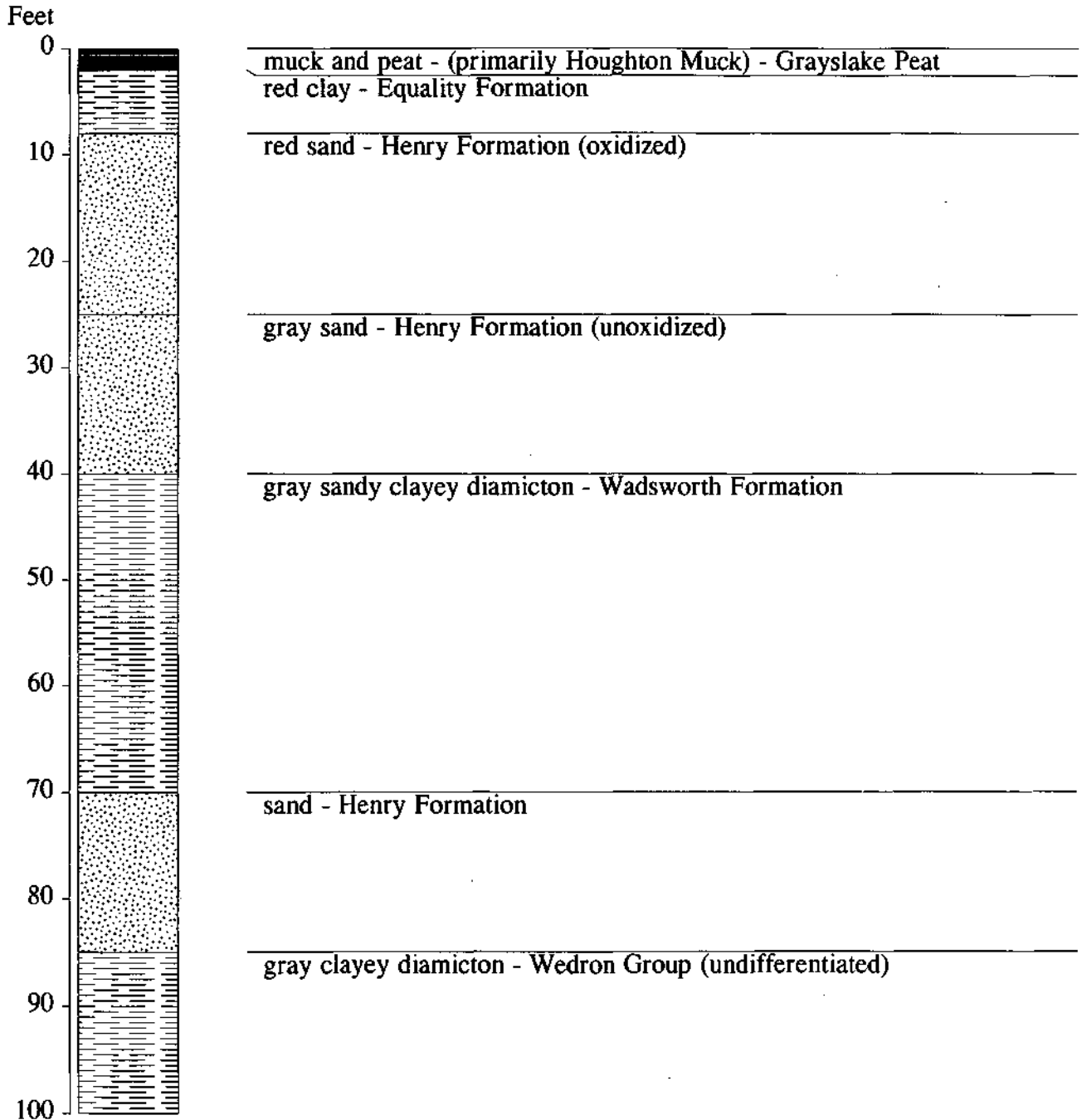
There is moderately sensitive geology (extensive sand and gravel near the surface; < 10 feet).

from surface water is high.

There is direct input of surface water through a culvert in the south part of the nature preserve.

Wauconda Bog Nature Preserve
Lake County - 44N 9E Section 36
800

Stratigraphic Column based on log in Section 36: 850'N 25'W SE/c, NE SE NW



Site #: 16 NPC #: 129 Site: Weingart Road Sedge Meadow
 County: McHenry Location: 17 45N 9E; 18 45N 9E
 Acres: 44.6 7.5 Map(s): Fox Lake
 Visit date: 05/10/96 Field crew: RAL SCM
 Photos taken? Yes Number: 1
 Photo description: R5 P10: showing runoff of road debris
 into southeast corner of preserve

SAMPLE INFORMATION

Source: wetland
 at marsh edge from water about 9" deep (noted on
 topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/10/96	09:02 A	7.4	10.6	450	55

PAST ON-SITE LAND USE:

minor grazing and snowmobiling

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	Homes surround the preserve. They are closest to the preserve in the east (along Pitzen Road) and to the south and east on the adjacent uplands. A few homes are developed on the hill to the west of Bald Knob. Homes parallel to the Fox River are slightly farther away to the northwest. Some homes are between the west edge of the preserve and Weingart Road.

above ground
disposal/dumping

X

Litter from Pxtzer
Road and evidence of .
previous dumping was
seen along the
eastern portion of
the preserve at base
of uplands.

underground
disposal X

X

see 'lawns' above

domestic wells

X

see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

on off

site site

location & description

other

X

'culverts' - under
Pitzer Road between
preserve and lake
front property; The
culverts probably
drain into the
preserve.

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

on off

site site

location & description

paved road

X

Is there potential impact from runoff? Yes.

Runoff is entering the preserve from Pitzer Road

(see file for sketch and picture of road debris).

RECREATIONAL

on off

site site

location's description

other

X

'McHenry Sportman's
Club'- southwest of
the preserve at
Weingart and Rolling
Lane Roads; skeet
range faces the
preserve; fuel tank
noted

ON-SITE MISCELLANEOUS

location
dumping as noted in 'above ground
disposal/dumping'

HYDROLOGY:

INPUTS

ground water

Except along the extreme southeast margin, ground water is at or near the surface over the entire preserve. It probably remains at or near the surface permanently since Pistakee Lake, which is essentially the same elevation as the fen, limits drainage. The preserve fills a depression in the peninsula between Pistakee Bay and the Fox River. Ground-water flow converges on the preserve from the high areas surrounding it on all sides except for the narrow connection between the fen and Pistakee Lake to the north. Recharge areas include all of these relatively high areas to the west, south, east, northwest and northeast.

surface water

No mapped perennial or intermittent streams enter the preserve. Primary surface-water inputs include overland runoff from the high areas surrounding the preserve as described above. Runoff is greatly enhanced by paving adjacent to the preserve and runoff debris was seen (see photo on file). Runoff is particularly great along the paved road bordering the nature preserve on the northeast. A culvert was observed which conducted runoff from a residential area east of this road into the nature preserve.

OUTPUTS

ground water

Shallow ground water converges on and discharges within the preserve by seepage and evapotranspiration. There is little or no shallow ground water output.

surface water

Surface water (primarily ground-water discharge within the preserve) flows north out of the preserve and into Pistakee Lake. This occurs north of the preserve, possibly through one or more culverts under the northwest-southeast trending road a short distance (0.1 - 0.2 mi.) north of the preserve.

ALTERATIONS

Paving and installation of at least one culvert have altered surface-water input to the preserve. These alterations have probably increased the volume of runoff into the preserve, created areas of great surface-water input (e.g., culvert mouths and areas adjacent to paved roads - particularly along the northeast margin of the preserve), and caused increased pulses of surface water input to the nature preserve during and immediately after rainfall events.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

The fen area is entirely underlain by the Houghton Muck. The small dry area in the east-central part of the nature preserve is underlain by Casco silt loam to loam.

QUATERNARY DEPOSITS

Grayslake Peat/ Equality Formation/Henry Formation/Tiskilwa Member

BEDROCK

upper lithology: limestone

depth: 100+ feet

GEOMORPHOLOGY

kame and kettle complex; part of Pistakee Lake Lowland

TOPOGRAPHY

Flat lowlands at site are surrounded by steep sided kames east-northeast of site.

Potential for Contamination:

of ground water is moderate.

Geology is not sensitive. Sources are present at residential developments.

of surface water is high.

Observed impacts of runoff (litter washed into wetland) along east margin of nature preserve (Pitzen Road).

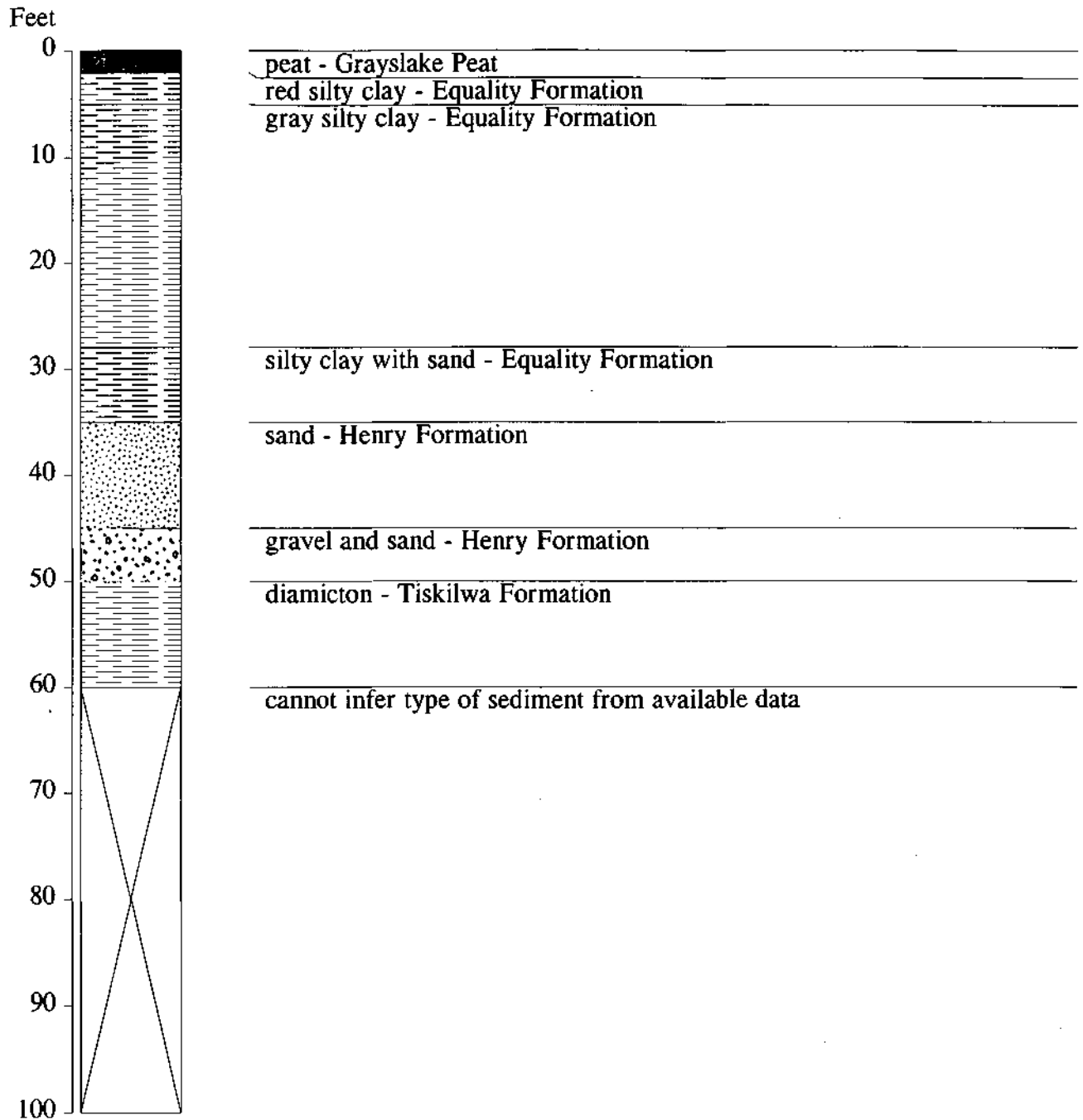
Initial Assessment of Site Vulnerability:

from ground water is moderate.

from surface water is high.

Localized impacts on the northeast margin of nature preserve could be profound.

Weingart Road Sedge Meadow
 McHenry County - 45N 9E Sections 17, 18
 760
 Stratigraphic Column based on two logs in Section 17



Site #: 85 NPC #: 229 Site: Wilkinson-Renwick Marsh
 County: DeKalb Location: 28 41N 4E, . (NW)
 Acres: 46.0 7.5 Map(s): Kirkland
 Visit date: 05/07/96 Field crew: RAL SCM
 Photos taken? Yes Number: 2
 Photo description: R4P1: on scenic platform overlooking
 marsh, looking south; R4P2: on abandoned
 railroad right-of-way showing damming by
 railroad roadbed, looking southwest; both
 locations noted on the topo

SAMPLE INFORMATION

Source: wetland
 at the edge of the marsh in cattails (noted on
 topo)

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/07/96	07:33 P	7.6	11.6	460	43

PAST ON-SITE LAND USE:

railroad lines (abandoned) on-site; This site was
 probably not farmed, but there may have been grazing on
 the periphery.

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	surrounding the preserve except at two rural residences

livestock		X	A hog operation is located to the west-southwest on Route 64 and includes five pole barns.
surface impoundments/feed lots		X	probably at the hog operation
drainage wells/tile outlets/ditches		x	on adjacent row cropped fields
RURAL RESIDENTIAL			
	on site	off site	location & description
domestic wells (infers septic system)		X	one residence to the northeast; one residence to southeast; both adjacent to preserve
TRANSPORTATIONAL			
	on site	off site	location & description
paved road		X	Route 64 (south), Glidden Road (east) and Old State Road (north); sketch on file
railway	x		An abandoned Chicago & Northwestern Line runs through the preserve and is used as a trail to a scenic platform. Milwaukee, St. Paul & Pacific Line is at the east edge of the preserve between the preserve and buffer.

Is there potential impact from runoff? No.

RECREATIONAL

	on site	off site	location & description
trail development	x	X	on the abandoned rail line

ON-SITE MISCELLANEOUS

location
dumping north of Chicago and Northwestern Line

HYDROLOGY:

INPUTS

ground water

No clear regional ground-water flow direction is discernable from surface topography. The site appears to be an upland depressional wetland.

surface water

An inlet is in the south part of the preserve (noted on soil survey sheet 30, DeKalb County). The area north of Chicago & Northwestern Line may receive runoff from fields to the north. Rail lines influence surface drainage. Field tile input may be present although none was observed.

OUTPUTS

ground water

Local discharge occurs into the marsh.

surface water

no distinct outputs

ALTERATIONS

Railroad lines; Chicago and Northwestern Line runs through the prairie pothole and affects surface water movement and restricts circulation of surface water.

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

67-Harpster silty clay loam and 104-Virgil silt loam

QUATERNARY DEPOSITS

Peyton Colluvium/Tiskilwa Member

BEDROCK

upper lithology: dolomite, shale

supplemental description:

Surficial bedrock is interbedded shale and dolomite, possibly the Maquoketa Formation.

depth: 140 - 185 feet

GEOMORPHOLOGY

prairie pothole

TOPOGRAPHY

very subdued topography with 10 to 25 feet of total relief in a four square mile area near the preserve

Potential for Contamination:

of ground water

from agricultural land

of surface water

from agricultural fields, railroads and tiles

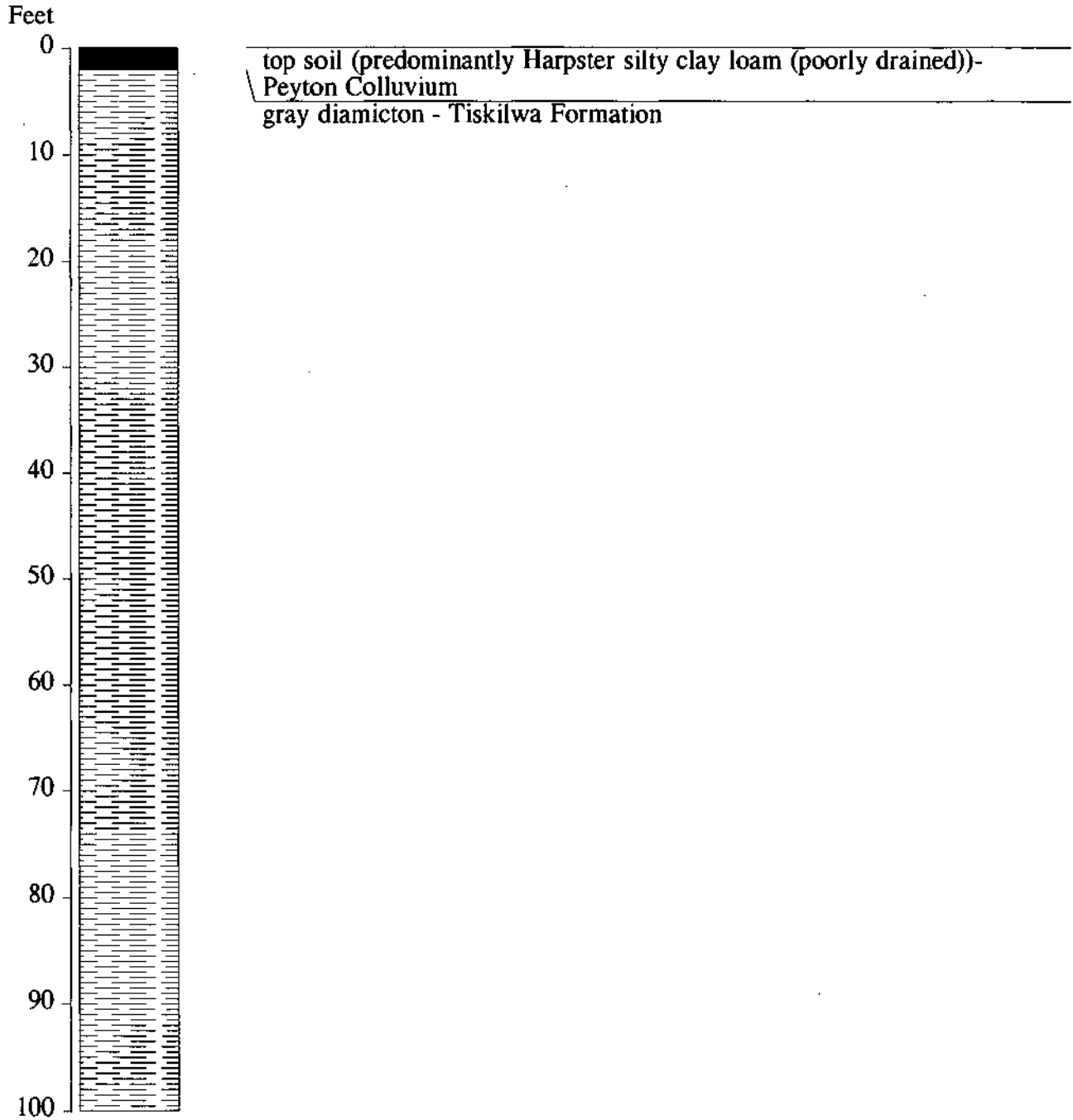
Initial Assessment of Site Vulnerability:

from ground water is low to moderate.

from surface water is moderate.

Wilkenson-Renwick Marsh Nature Preserve
DeKalb County - 41N 4E, Section 28
885

Stratigraphic Column based on log in Section 27: 100'N 75'W SE/c, SW SW NW



Site #: 48 NPC #: 181 Site: Wilmington Shrub Prairie
 County: Will Location: 2 32N 9E; 11 32N 9E
 Acres: 142.7 7.5 Map(s): Wilmington
 Visit date: 05/07/96 Field crew: RAL SCM
 Photos taken? No

SAMPLE INFORMATION

Source: stream

Sample 1 is from a drainage ditch near northeast corner of preserve (noted on topo).

pond

Sample 2 is from a pond at the northwest corner of the preserve (noted on topo) .

	DATE	TIME	pH	TEMP	SC	ORP
Sample 1	05/07/96	02:21 P	.6.8	12.0	1070	52
Sample 2	05/07/96	02:39 P	8.5	14.0	430	46

PAST ON-SITE LAND USE:

grazing and row cropping; See dedication proposal for additional information.

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	at suburban residences and farmhouses mainly east of the preserve on Wilmington Road; A few others are located on Route 113 (south of preserve) and on Coal City Road (north of preserve).
domestic wells		X	see 'lawns' above
underground disposal		X	see 'lawns' above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
mining		X	abandoned strip mine along west edge of site; The strip mine now seems to be used for recreational purposes. A sportsmen's club owns much of it. The lakes are used for fishing and hunting.
pipelines		X	See topo map on file. A natural gas pipeline, trending northwest-southeast, passes east of the site.
other		X	'waste hauler' - northwest of site on northeast corner of intersection of Route 53 and Coal City Road; A number of porta-johns are located at this site.

AGRICULTURAL

	on site	off site	location & description
row crops		X	north, south and east of site
storage tanks		X	at farmhouses (?)
livestock		X	at farmhouses (?)
drainage wells/tile outlets/ditches		X	Dedication proposal mentions drainage and lowering of the water table. We observed an east - west trending ditch along the north border of the preserve.

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
gravel road		X	Private road (to Sportsmen's Club?) along northwest corner of nature preserve. Quad map shows roads near southwest corner of site. These are probably gravel or unpaved.
paved road		X	Coal City Road (north), Wilmington Road (east), and Route 113 (south)

Is there potential impact from runoff? Yes.
runoff from private gravel road at northwest corner of preserve; Impacts, if any, are expected to be negligible.

NO RECREATIONAL LAND USES NOTED

ON-SITE MISCELLANEOUS

	location
dumping	minor dumping near northeast corner of nature preserve

HYDROLOGY:

INPUTS

ground water

Topography suggest that ground water enters the preserve as part of a regional flow system from west to east with the potential for a northward component to the flow in the southern part of the preserve.

surface water

A north-south ditch was observed extending south from the northwest corner of the preserve. The wetland area extends west of the preserve and specific input/output relationships are not clear.

OUTPUTS

ground water

Regional discharge is to the Kankakee River (to the east). Local discharge is into marshes on-site.

surface water

Ditches along the north boundary drain to the east and a natural channel drains the southeast corner of the preserve to the east.

ALTERATIONS

Induced drainage has lowered the water table. Alteration of the land surface at the strip mine undoubtedly has impacted ground-water movement.

GEOLOGY:

Primary geologic origin(s): glacial, fluvial/alluvial

SOIL ASSOCIATION/SERIES

La Hogue loam, Maumee fine sandy loam, Hagener loamy sand, Ridgeville fine sandy loam, Watseka loamy fine sand and Plainfield sand (all sandy soil series) are present.

QUATERNARY DEPOSITS

Henry-Equality Formation/Henry Formation/Maquoketa Shale

BEDROCK

upper lithology: limestone, dolomite, shale

depth: 27 - 80 feet

GEOMORPHOLOGY

Kankakee River terrace (west of river)

TOPOGRAPHY

very flat; less than 15 feet of relief

Potential for Contamination:

of ground water is moderate to high.

Geology is sensitive both on and off-site. Potential contamination sources were indentified.

of surface water is moderate to high.

Initial Assessment of Site Vulnerability:
from ground water is moderate to high.

from surface water is moderate to high.

Additional Comments

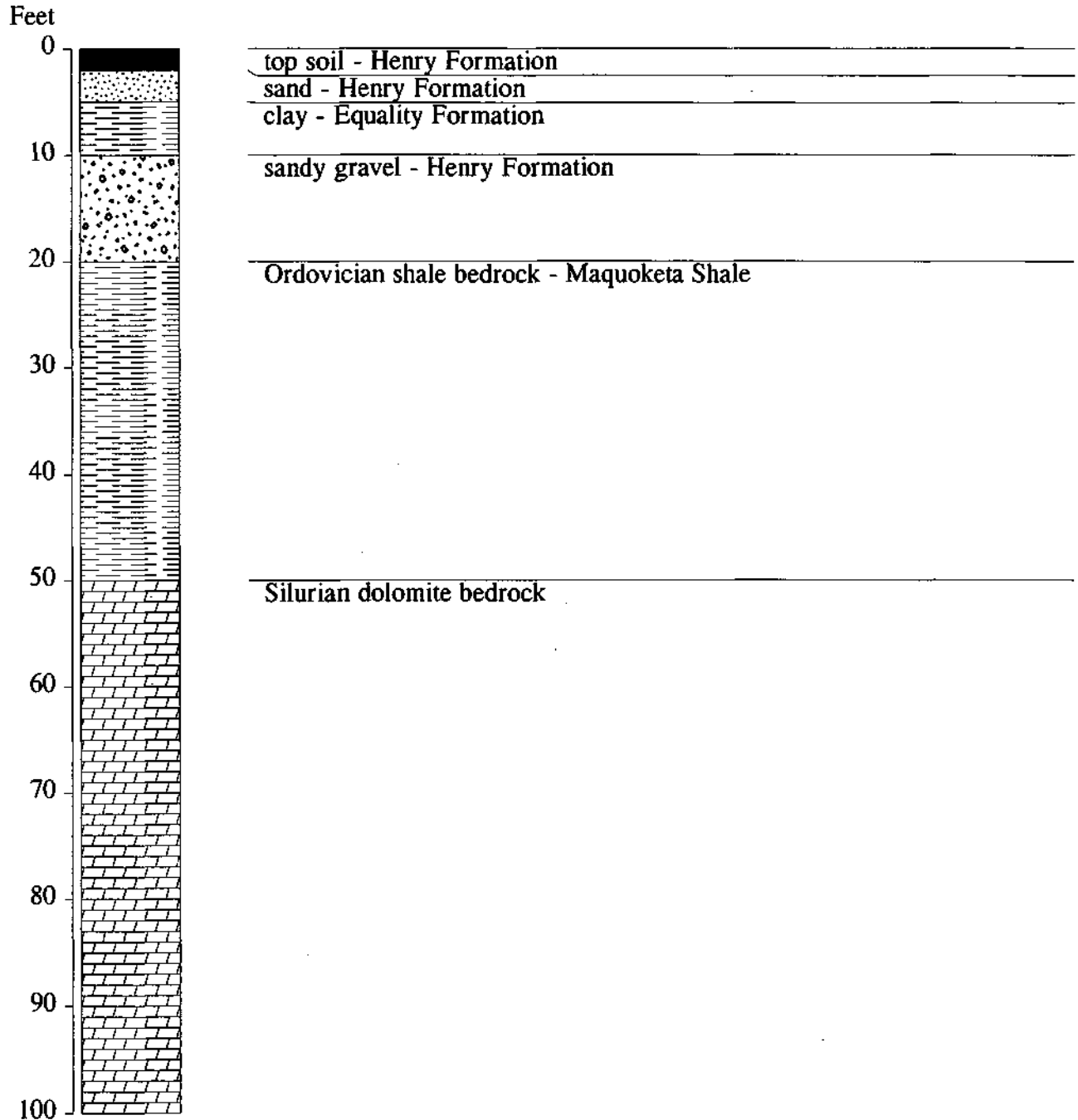
Even though the regional gradient is from west to east, the presence of a sportmen's club in the abandoned strip mine suggests that water quality there is not poor. Runoff from row crops would probably have a greater impact on water quality than the abandoned strip mine. However, the water quality at the strip mine is unknown. The worse the water quality, the greater potential impact on water quality at the preserve.

Wilmington Shrub Prairie Nature Preserve

Will County - 32N 9E Sections 2, 11

555

Stratigraphic Column based on log in Section 2: SE SE NW



Site #: 67 NPC #: 72 Site: Windfall Prairie
 County: Vermilion Location: 8 20N 12W, (NW NE)
 Acres: 61.0 7.5 Map(s): Danville NW
 Visit date: 09/04/96 Field crew: RCB RAL MJM
 Visit date: 06/28/95 Field crew: RCB RAL MVM HAW
 Photos taken? No

NO SAMPLES TAKEN

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

NO SUBURBAN RESIDENTIAL LAND USES NOTED

NO INDUSTRIAL/COMMERCIAL/MUNICIPAL LAND USES NOTED

AGRICULTURAL

	on site	off site	location & description
row crops		X	surrounding site, except along river
drainage wells/tile outlets/ditches	x	X	Tiling may be present.

RURAL RESIDENTIAL

	on site	off site	location & description
domestic wells (infers septic system)		X	very few to north and east

TRANSPORTATIONAL

	on site	off site	location & description
dirt road		X	leads to site through fields and trends northwest-southeast

Is there potential impact from runoff? No.

RECREATIONAL

	on site	off site	location & description
trail development	x		horse trail

NO ON-SITE MISCELLANEOUS LAND USES NOTED

HYDROLOGY:

INPUTS

ground water

Flow is west/southwest from sand seams. Local gradients will vary depending on topography and proximity to the Middle Fork of the Vermilion River.

surface water

The main gully was dry through most of the site. No other distinct inputs were seen.

OUTPUTS

ground water

Discharge occurs on-site at an abundant number of seeps and off-site due to local gradients.

surface water

An unnamed creek which flows through the site and discharges to the Middle Fork is the primary output.

ALTERATIONS

horse trail: minimal impact expected

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Camden, Littleton and Sumner

QUATERNARY DEPOSITS

An organic horizon with sticks/wood overlies sandy/gravelly seams in the till. Main gully is cut through a sequence of tills. The Robein Silt occurs under the Tiskilwa Member at the Higginsville Section nearby. The base of the Tiskilwa is about 632 feet in elevation.

BEDROCK

upper lithology: shale

GEOMORPHOLOGY

The upland slopes to the Middle Fork. An intermittent stream is located in the main gully.

TOPOGRAPHY

On-site relief is approximately 80 feet.

Potential for Contamination:

of ground water

from agricultural fields

of surface water

from agricultural runoff

Initial Assessment of Site Vulnerability:

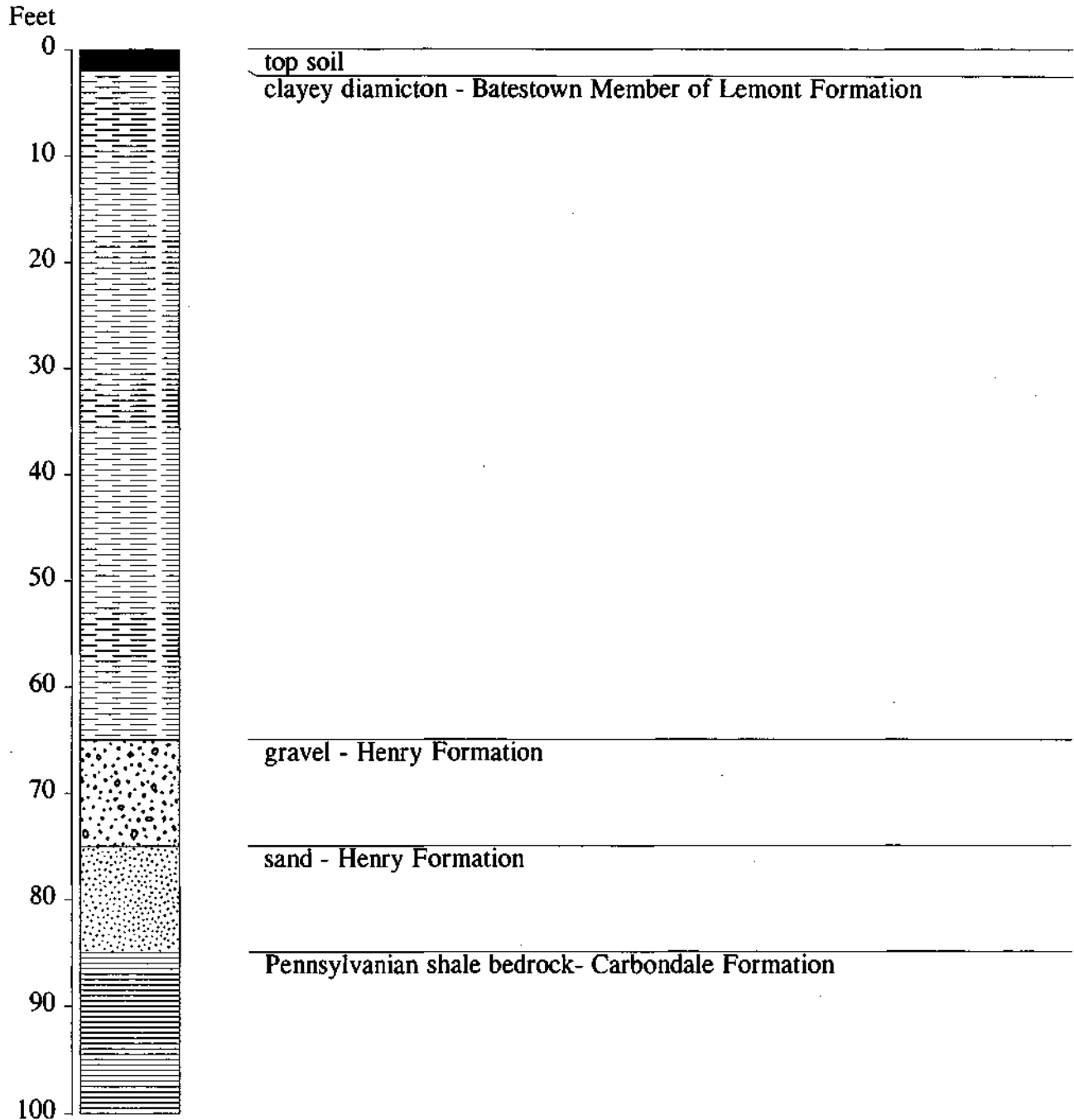
from ground water is low.

Agriculture is upgradient, but not considered a real threat because the geology is not sensitive.

from surface water is very low.

Windfall Prairie Nature Preserve
Vermilion County - 20N 12E Section 8
620

Generalized Stratigraphic Column based on logs in Section 4 and 7 supplemented by information in dedication proposal



Site #: 38 NPC #: 164 Site: Wolf Road Prairie
 County: Cook Location: 30 39N 12E
 Acres: 50.5 7.5 Map(s): Hindsdale
 Visit date: 07/09/96 Field crew: RCB MVM
 Photos taken? Yes Number: 6
 Photo description: prairie, old sidewalks, and flowers

NO SAMPLES TAKEN

NO ON-SITE PAST LAND USES NOTED

PRESENT LAND USE:

SUBURBAN RESIDENTIAL

	on site	off site	location & description
lawns		X	large homes west of site and some north
domestic wells		X	possibly at homes noted above

INDUSTRIAL/COMMERCIAL/MUNICIPAL

	on site	off site	location & description
landfill		X	1/4 mile northwest of site

NO AGRICULTURAL LAND USES NOTED

NO RURAL RESIDENTIAL LAND USES NOTED

TRANSPORTATIONAL

	on site	off site	location & description
paved road		X	31st Street to south and Wolf Road to east

Is there potential impact from runoff? Yes.
from 31st Street and Wolf Road

RECREATIONAL

	on site	off site	location & description
trail development	x		concrete walkways from pre-depression plan for houses (houses never built)
parking			on south side of site

ON-SITE MISCELLANEOUS

location
dumping minimal concrete dumping

HYDROLOGY:

INPUTS

ground water

Flow is presumably to the north (in south part) and to the south (in the north part). Tributaries of the Salt Fork may add an easterly component.

surface water

Flow west to east in small creeks that empty into Salt Creek.

OUTPUTS

ground water

discharge in wetland

surface water

via creeks flowing to the east

GEOLOGY:

Primary geologic origin(s): glacial

SOIL ASSOCIATION/SERIES

Lawson, Beaucoup, Darwin, Hayward and Belknap in low areas; Elliot, Ashkum and Andres in higher areas

QUATERNARY DEPOSITS

Wadsworth Member (about 25 feet) over Henry Formation sand and gravel (about 10 feet) over Wadsworth Member (about 10 feet) over sand and gravel (about 5 feet)

BEDROCK

upper lithology: limestone, dolomite

depth: 50 - 100+ feet

GEOMORPHOLOGY

till plain

TOPOGRAPHY

very gently sloping to southeast; Total relief on-site is less than 30 feet.

Potential for Contamination:

of ground water

from landfill northwest of site

of surface water

from landfill to west

Initial Assessment of Site Vulnerability:

from ground water is moderate.

A landfill exists northwest of the site, however materials are not sensitive because of relatively thick till.

from surface water is moderate.

landfill northwest of site; possible road runoff from 31st Street, Wolf Road and housing to the west and north

Wolf Road Prairie Nature Preserve
Cook County - 39N 12E Section 30
650

Stratigraphic column based on log in Section 30: SE SE SE supplemented by INAI
info

