APPENDIX K
WATER QUALITY

This Appendix contains background material, which supplements the Water Quality material contained in **Chapter 4**, **Affected Environment** and **Chapter 5**, **Environmental Consequences.** This Appendix consists of the following sections:

- K.1 Watershed Descriptions
- K.2 Airport Stormwater Runoff
- K.3 Department of Aviation – Phase I NPDES Individual Discharge Permit
- K.4 Stormwater Quality Management Improvements
- K.5 Groundwater

K.1 WATERSHED DESCRIPTIONS

This section describes the individual Phase I NPDES watershed basin descriptions and existing drainage conditions at the Airport.

K.1.1 Willow-Higgins Creek Watershed

Higgins Creek joins Willow Creek at the northwest corner of the Airport to form Willow-Higgins Creek. Upstream of the confluence, Higgins Creek is bordered by industrial, commercial, and residential property, and Willow Creek is bordered by residential and commercial property. Willow-Higgins Creek joins the Des Plaines River near Higgins Road. The total area of the Willow-Higgins Creek watershed is approximately 12,310 acres, of which the Airport contains approximately 3,453 acres (including the Airport property east of Mannheim Road in the Willow-Higgins Creek watershed). See **Exhibit 5.7-1** in **Section 5.7, Water Quality,** for the watershed boundaries.

K.1.2 Crystal Creek Watershed

Crystal Creek's total watershed is approximately 3,270 acres, and the headwaters of Crystal Creek are located entirely on the Airport property. The Airport contains approximately 1,770 acres of the total watershed. Most of this area drains to the South Detention Basin. The South Detention Basin is normally discharged to Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) facilities for treatment, but can be discharged to Crystal Creek under appropriate conditions. See **Section 5.13**, **Floodplains,** for more information on the Crystal Creek watershed. Crystal Creek joins the Des Plaines River near Lawrence Avenue in Schiller Park, approximately 2.3 miles downstream of the South Detention Basin.

K.1.3 Bensenville Ditch/Silver Creek Watershed

Bensenville Ditch is located on the south part of the Airport. It enters the Airport property from the west under York Road and exits the Airport property by flowing under a culvert at Irving Park Road. South of Irving Park Road, Bensenville Ditch is known as Silver Creek. Silver Creek flows into the Des Plaines River near Chicago Avenue in Melrose Park. The total drainage area of the Bensenville Ditch/Silver Creek Watershed is approximately 7,420 acres, consisting of commercial, residential, and industrial land uses. The area of the watershed within Airport property is approximately 1,381 acres.

K.2 AIRPORT STORMWATER RUNOFF

This section describes the existing Airport stormwater runoff character by watershed. The existing drainage basins are illustrated in **Exhibits 5.7-2** and **5.7-3** in **Section 5.7, Water Quality**. **Tables K-1**, **K-2,** and **K-3** show the drainage basins and corresponding Phase I NPDES outfalls, and activities associated with each drainage area. Portions of the Airport property that drain to the Willow-Higgins Creek, Crystal Creek, Bensenville Ditch, and Des Plaines River are not included within the Phase I NPDES drainage basins. These areas drain directly to the creeks and river by ordinary sheet flow and are not currently covered by the Phase I NPDES permit, as aircraft and/or airfield deicing or industrial operations do not occur in these areas of the Airport.

K.2.1 Willow-Higgins Creek Stormwater

The portion of the Willow Higgins Creek watershed on the Airport contains numerous runways and taxiways, the hangar area, the former Air Force property, and the rental car area. There are 23 existing outfalls in the watershed. Of these, six (6) require Form 2F (industrial activities) and four (4) require Form 2C (deicing activities). Form 2C is used for any outfall that could receive stormwater that may contain process wastewater discharges from Airport airside deicing agents. Form 2F is used for outfalls that receive stormwater discharges associated with industrial activities other than airport airside deicing agents. This would include activities other than airport airside deicing agents. This would include activities such as fueling operations and aircraft maintenance. During non-deicing season, 2C outfalls would be regulated as 2F outfalls. Outfalls that do not fall under these categories are non-regulated stormwater and do not require forms as part of the Phase I NPDES permit application. The other outfalls drain areas with no industrial or deicing activities.

The City of Chicago Department of Aviation (DOA) has constructed significant water quality and flood control improvements in the section of this watershed known as the North Airfield. These improvements allow the DOA to capture nearly all stormwater that contains airside deicing agents in large detention basins and pump this water to a MWRDGC wastewater treatment plant. These improvements eliminated seven outfalls of the current Phase I NPDES permit. During the deicing season (generally from October through April), flows are directed to the basins. During non-deicing season, when water quality meets the appropriate standards,

flows are diverted to Willow-Higgins Creek. The diversion areas are explained in **Section K.4.3**, **North Airfield Drainage Improvements**. The basins and outfalls are illustrated in **Exhibit 5.7-2** and **5.7-3,** and listed in **Table K-1.**

TABLE K-1
WILLOW-HIGGINS CREEK EXISTING BASINS

Outfall Number (Previous Outfall Number)	Sub-Basin(s)	Current Primary Activities	Phase I NPDES Form(a)
W135 (091-A / B)	502, 503, 800 (deicing season emergency overflow)	Deicing activity, industrial areas, maintenance, fueling stations	2C
	1350 (non-deicing season and deicing season emergency overflow)		
	1903, 1952 (non-deicing season, high flow conditions, and deicing season emergency overflow)		
W167 (NA, Future Willow Higgins Reservoir Outfall)	502, 503, 800 1350 (non-deicing season)	Deicing activities, industrial areas, maintenance, fueling stations	2C
	1903, 1952 (non-deicing season, high flow conditions)		
	Willow Higgins Creek		
W180 (Previously unassigned, on Air Force property)	1800	Deicing and runway activities	2C
W190 (Previously unassigned, on Air Force property)	1901, 1902	Runway activities	2C
	1903 (non-deicing season, low flow conditions)		
W040 (051)	400	AGI facility, construction staging area	2F
W050 (061)	501	Industrial maintenance, fueling stations	2F
	502 (non-deicing season)		
W060 (None)	600	Construction staging area	2F
W080 (081)	800 (non-deicing season)	Industrial, maintenance, fueling stations	2F
W130 (091)	1300	Fire fighting practice facility	2F
W195 (121)	1951	Car rental facilities, fueling stations	2F
	1952 (non-deicing season, low flow conditions)		
W010 (None)	100	None	None
W020 (011)	200	None	None
W030 (None)	300	None	None
W070 (None)	700	None	None
W090 (None)	900	None	None
W100 (None)	NA	None	None
W110 (None)	NA	None	None
W120 (None)	1200	None	None
W140 (None)	NA	None	None
W150 (None)	NA	None	None
W160 (None)	1600	None	None
W170 (None)	NA	None	None
W200 (None)	2000	None	None

Notes: (a) Form 2C is used for any outfalls that receive stormwater that may contain airport airside deicing agents. Form 2F is used for any outfalls that receive stormwater that is associated with industrial activities other than airport airside deicing agents. No form is required for outfalls that receive stormwater from areas with no significant industrial or deicing activity.

K.2.2 Crystal Creek Stormwater

The Phase I NPDES basins and outfalls on the Airport that flow into Crystal Creek are illustrated in **Exhibit 5.7-3** in **Section 5.7, Water Quality,** and listed in **Table K-2**. There are 12 outfalls in this watershed. Of these, two (2) require a Form 2F and one requires a Form 2C. The other nine (9) outfalls drain areas with no industrial or deicing activity. The watershed within the Airport property includes the terminal area, vehicle parking structures, portions of the cargo facilities, portions of several runways and taxiways, and snow dump 3. Typical activities that are conducted in this watershed include aircraft fueling, maintenance operations, cargo handling, and the seasonal application of airport airside deicing chemicals. Most of these areas drain first to an oil water separator, then to the South Detention Basin prior to discharge from Airport property.

The South Detention Basin is a stormwater detention facility. This detention is used to capture airport airside deicing chemicals within Sub-Basins 3100-3109. Flows are eventually treated at the MWRDGC's Stickney Water Reclamation Plant. However, if water meets Phase I NPDES discharge limits, flows may be released to the Des Plaines River.

TABLE K-2
CRYSTAL CREEK EXISTING BASINS

Outfall Number (previous outfall number)	Sub-Basin(s)	Current Primary Activities	Phase I NPDES Form (a)
C310 (001)	3100, 3101, 3102, 3103, 3104 3102A and 3105 thru 3109 (low flow)	Deicing activities, fueling, maintenance, Snow Dump-3	2C
D205 (None)	2050 3105 (high flows)	Runway activities (sub-basin 3105 during high flow only)	2F
C270 (141)	2700 3106 (high flow)	Roads, industrial, maintenance areas, fueling station and runway activities (sub-basin 3106 – during high flows)	2F
C210 (None)	2100	None	None
C220 (None)	2200	None	None
C230 (None)	2300	None	None
C240 (None)	2400	None	None
C250 (None)	2500	Snow Dump-7	None
C260 (None)	2600	None	None
C280 (None)	2800	None	None
C290 (None)	2900	None	None
C300 (None)	3000	None	None

Notes: (a) Form 2C is used for any outfalls that receive stormwater that may contain airport airside deicing agents. Form 2F is used for any outfalls that receive stormwater that is associated with industrial activities other than airport airside deicing agents. No form is required for outfalls that receive stormwater from areas with no significant industrial or deicing activity.

K.2.3 Bensenville Ditch Stormwater

There are 23 outfalls in the Bensenville Ditch watershed on the southwest side of the Airport. Of these, four (4) require Form 2F and none require Form 2C. The other outfalls drain areas

with no industrial or deicing activities. The Bensenville Ditch watershed includes a portion of the South Cargo Area, two cemeteries, and the City of Chicago Bureau of Forestry site. Airport industrial activities that are conducted in this watershed include aircraft fueling, maintenance operations, and cargo handling.

TABLE K-3
BENSENVILLE DITCH EXISTING BASINS

Outfall Number (previous outfall number)	Sub-Basin(s)	Current Primary Activities	Phase I NPDES Form(a)
B315 (None)	3150 3108 (high flows only)	Runway Activities (sub-basin 3108 – during high flows only)	2F
B370 (371)	3700 3109 (high flows only)	Industrial areas, fueling station. Runway activities (sub-basin 3109 – during high flows only)	2F
B430 (441)	4300	Industrial area, maintenance building, fueling station	2F
B455 (471)	4551, 4552, 4553, 3102A (high flow)	Runway activities (Subbasin 3102A – during high flows only)	2F
B317 (none)	3151	None	None
B320 (none)	3200	None	None
B330 (331)	3300	None	None
B340 (341)	3400	None	None
B350 (351)	3500	None	None
B360 (361)	3600	None	None
B375 (none)	3751, 3752	None	None
B380 (NA)	3800	None	None
B390 (381)	3900	None	None
B400 (391)	4000	None	None
B410 (411)	4100	None	None
B420 (421)	4200	None	None
B440 (451)	4400	Truck Lot	None
B450 (461)	4500	Building, truck lot	None
B460 (471)	4600	None	None
B470 (none)	4700	None	None
B480 (none)	4800	None	None
B490 (none)	4900	None	None
B500 (none)	5000	None	None

Notes: (a) Form 2C is used for any outfalls that receive stormwater that may contain airport airside deicing agents. Form 2F is used for any outfalls that receive stormwater that is associated with industrial activities other than airport airside deicing agents. No form is required for outfalls that receive stormwater from areas with no significant industrial or deicing activity.

K.2.4 Des Plaines River Watershed

Some stormwater runoff from O'Hare property enters the Des Plaines River directly. Areas near Mannheim Road flow into various sewer inlets then north to the IDOT pump station at the Mannheim/I-190 interchange. From there, a storm sewer directs the water directly to the Des Plaines River. The Airport property east of Mannheim Road, south of I-190, also drains to the Des Plaines River through this pump station.

K.3 DEPARTMENT OF AVIATION – PHASE I NPDES INDIVIDUAL DISCHARGE PERMIT

Phase I of the NPDES stormwater program was established in 1990 and addressed discharges from large construction activities disturbing five acres or more of land. Phase II of the NPDES stormwater program, which became final on December 8, 1999, covers construction activities disturbing one or more acres of land. The Phase II of the NPDES stormwater program includes General Storm Water Permits for Small Municipal Separate Storm Sewer Systems (MS4s).

The IEPA originally issued a Phase I NPDES individual discharge permit (IL0002283) to the City of Chicago for the Airport in 1975 to regulate City and tenant activities. This permit covers water quality of stormwater runoff from airside areas, where aircraft and airfield deicing activities are conducted, and all other airport industrial activities, which include aircraft maintenance, vehicle maintenance, and large-scale food preparation operations. The permit has since been reissued on November 19, 1996, with an expiration date of November 30, 2001. An application to renew the permit was submitted to IEPA on September 7, 2001, and was revised and resubmitted in August of 2002. Thereafter, a further updated application was submitted to IEPA on March 3, 2005.[1] It is currently under review by the IEPA, during which time the original permit is still valid. IEPA's draft permit is likely to be available by September 2005.

Current and potential future construction activities at the Airport are covered under the City of Chicago's General Storm Water Permit for Small Municipal Separate Storm Sewer Systems (MS4). The IEPA received the MS4 permit application from the City on March 10, 2003 and after review and acceptance, issued the permit to the City on September 20, 2004. This permit is valid until February 29, 2008.

The MS4 permit requires that the City develop a stormwater management program comprised of best management practices (BMPs) and measurable goals for each of the following six minimum control measures:

- Public education and outreach on stormwater impacts
- Public involvement and participation
- Illicit discharge detection and elimination
- Construction site stormwater runoff control
- Post construction stormwater management in new development and redevelopment
- Pollution prevention/good housekeeping for municipal operations

The City must also submit an annual report to IEPA in June of each year and the reports must include:

- The status of the compliance with the permit conditions, including an assessment of the BMPs and progress toward the measurable goals

[1] O'Hare NPDES Revised Permit Renewal Package Final Supplement from Kellie Rotunno, CDM, to Tom McSwiggin, IEPA, dated March 3, 2005.

- Results of any information collected and analyzed, including monitoring data
- A summary of the stormwater activities planned for the next reporting cycle
- A change in any identified best management practices or measurable goals
- If applicable, notice of relying on another governmental entity to satisfy some of the permit obligations

IEPA issued a Phase I NPDES individual permit (IL 0066567) to Airport Group International (AGI), now known as Aircraft Service International Group (ASIG), for the fuel farm, which is located within Sub-Basin 400. Since the fuel farm was located within a single basin, the IEPA decided to issue a separate permit for this facility. The permit has effluent limits and water quality sampling requirements. This permit became effective in May 1996, and expired on April 30, 2001. An application to reissue the permit with IEPA is currently being developed, during which time the original permit is still valid.

All Phase I NPDES basins and outfalls are being renumbered and re-delineated to include updated drainage conditions as a result of the North and South Airfield drainage improvement projects, described in **Section K.4.2**, **South Airfield Drainage Improvements**, and **Section K.4.3**, **North Airfield Drainage Improvements**. These changes would be reflected in a new Phase I NPDES permit.

K.3.1 Permit Parameters for Department of Aviation Individual Phase I NPDES Permit

The following discussion explains the water quality parameters of the required monitoring under the current Phase I NPDES permit.

K.3.1.1 Biochemical Oxygen Demand (BOD)

The BOD represents the amount of oxygen used when biodegradable organics are metabolized. BOD is of concern due to its inverse correlation with the dissolved oxygen (DO) in the waterbody; as BOD concentrations increase, the dissolved oxygen decreases. The amount of DO present in a waterbody is directly related to the maintenance of its aquatic life. Low DO levels can lead to fish kills and can impair the aquatic communities present in the water. DO can enter water via atmospheric diffusion, production during photosynthesis, and from other water inflows or tributaries.[2] Concentrations of DO are reduced when oxygen is in demand, such as for use in the degradation of carbonaceous or nitrogenous material.

K.3.1.2 pH

Many fish and aquatic organisms have a narrow tolerance range of pH, which is a measure of hydrogen ion concentration and serves as a scale of acidity. When pH values fall outside of the tolerance range of an ecosystem, fish kills and species population changes may occur. Therefore, pH is a parameter that indicates the health of the waterbody.

[2] Water Quality, G. Tchobanoglous and E.D. Schroeder, Addison-Wesley, Reading, Massachusetts, 1985.

K.3.1.3 Temperature

Changes in water temperature outside the natural seasonal fluctuations may cause negative impacts to fish and aquatic life present in the waterbody. Many aquatic organisms have a specific temperature tolerance range in which they reproduce and thrive. Warmer temperatures also increase chemical and biochemical reaction rates, which leads to greater oxygen demand in the water column. Furthermore, DO is inversely proportional to temperature, i.e. colder water has a greater capacity to dissolve oxygen than warm water. Therefore, elevated water temperatures outside normal seasonal fluctuations can be related to decreased water quality.[3]

K.3.1.4 Total Dissolved Solids

Total dissolved solids can disrupt the ability of aquatic organisms to respire and can interfere with the photosynthesis of aquatic plants. High levels of solids increase the turbidity of the water, thereby increasing the attenuation of light and disrupting the energy cycles of a stream.

K.3.1.5 Ammonia Nitrogen

Ammonia nitrogen (AN) is toxic to aquatic life at high concentrations. As pH decreases, the toxicity of AN increases. AN, in the receiving streams, decreases the oxygen available for aquatic organisms. In addition, ammonia odors occur as temperatures increase. Urea, a derivative of ammonia, is found in runway deicing fluid used at the Airport.

K.3.2 Effluent Limits for Department of Aviation Individual Phase I NPDES Permit

The current Phase I NPDES permit includes both existing effluent limits and limits that would apply after completion and monitoring of the North and South Airfield improvements. The Airport is currently monitoring some of the impacts of the recent stormwater management modifications. The permit limits are summarized in **Table K-4.**

K.3.3 Sampling Points for Department of Aviation Individual Phase I NPDES Permit

The DOA is required by the Phase I NPDES permit to collect water quality samples at 19 outfalls and 3 other locations within Waters of the United States (WUS) on the Airport. The sampling locations are shown on **Exhibits 5.7-2** and **5.7-3** in **Section 5.7, Water Quality**. The sampling frequency at each location is indicted in **Table K-5**. Water samples collected at the Airport are analyzed for the following permit parameters: BOD, pH, temperature, total dissolved solids, and AN. The DOA is continually assessing and monitoring water quality improvements to collect, contain, and treat stormwater impacted by airport deicing agents, as explained in **Section K.4.5, Pollutant Reduction Program**.

[3] Water Quality, G. Tchobanoglous and E.D. Schroeder, Addison-Wesley, Reading, Massachusetts, 1985.

TABLE K-4
EFFLUENT LIMITATIONS – FOR 1996 DEPARTMENT OF AVIATION INDIVIDUAL PHASE I NPDES PERMIT

Sampling Point	Watershed	BOD5 (f) (mg/l) (30-day average)	BOD5 (mg/l) (daily maximum)	pH (daily maximum)	AN April - October (mg/l) (30-day average)	AN November - March (mg/l) (30-day average)	AN April - October (mg/l) (daily maximum)	AN November - March (mg/l) (daily maximum)	TDS (mg/l) (daily maximum)
WQ1	Willow-Higgins Creek	N / A(a)	N / A(a)	6.0 to 9.0	N / A(a)	N / A(a)	N / A(a)	N / A(a)	N / A(a)
WQ2(b)	Bensenville Ditch	N / A(a)	N / A(a)	6.0 to 9.0	N / A(a)	N / A(a)	N / A(a)	N / A(a)	N / A(a)
WQ3(b)	Bensenville Ditch	N / A(a)	N / A(a)	6.0 to 9.0	N / A(a)	N / A(a)	N / A(a)	N / A(a)	N / A(a)
011(b)	Willow-Higgins Creek	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2(b)	1,000(b)
021(d)	Willow-Higgins Creek	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2(c)	1,000(c)
031(d)	Willow-Higgins Creek	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2 (c)	1,000(c)
041(d)	Willow-Higgins Creek	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2(c)	1,000(c)
061(c)	Willow-Higgins Creek	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2(c)	1,000(c)
081(c)	Willow-Higgins Creek	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2(c)	1,000(c)
091(b)	Willow-Higgins Creek	20	40	6.0 to 9.0	1.5	3.8	3.0	7.2(b)	1,000(b)
091A / B	Willow-Higgins Creek	20	40	6.0 to 9.0	1.5	3.8	3.0	7.0	1,000
101	Willow-Higgins Creek	20	40	6.0 to 9.0	1.5	3.8	3.0	7.2	1,000
111(d)	Willow-Higgins Creek	20(b)	40(b)	6.0 to 9.0(b)	1.5(b)	3.8(b)	3.0(b)	7.2(b)	1,000(b)
112(d)	Willow-Higgins Creek	20(c)	40(c)	6.0 to 9.0(c)	1.5(c)	3.8(c)	3.0(c)	7.2(c)	1,000(c)
113(e)	Willow-Higgins Creek	20	40	6.0 to 9.0	1.5	3.8	3.0	7.2	1,000
114	Willow-Higgins Creek	20	40	6.0 to 9.0	1.5	3.8	3.0	7.2	1,000
121(b,d)	Car Rental Ditch(e)	10(b)	20(b)	6.0 to 9.0(b)	1.5(b)	3.8(b)	3.0(b)	7.2(b)	1,000(b)
001	Crystal Creek	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2	1,000
141	Crystal Creek	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2	1,000
372	Bensenville Ditch	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2	1,000
373(e)	Bensenville Ditch	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2	1,000
471	Bensenville Ditch	10	20	6.0 to 9.0	1.5	3.8	3.0	7.2	1,000

Notes: N / A = Not Applicable
(a) Only permit parameter is that the pH shall be in the range of 6.0 to 9.0.
(b) Phase I NPDES permit parameters do not apply because deicing fluids are no longer applied in the basin.
(c) Discharge diverted to Bensenville.
(d) Outfall eliminated.
(e) Phase I NPDES permit parameters do not apply until water quality improvements are completed.
(f) Biochemical Oxygen Demand (BOD5) expressed in 5 days under standardized conditions.

Source: NPDES Permit No. IL0002283, Illinois Environmental Protection Agency, November 19, 1996.

TABLE K-5
STATUS OF PHASE I NPDES SAMPLING POINTS FOR DEPARTMENT OF AVIATION INDIVIDUAL PERMIT

Previous Sampling Point ID	Current Sampling Point ID	Sample Frequency	Effluent Limits in Effect	Status
011	SP011	Once per month	N / A	Airport deicing fluids are no longer applied in this basin, flow has been redirected to the West Sewer System.
021	N / A	N / A	N / A	Eliminated
031	N / A	N / A	N / A	Eliminated
041	N / A	N / A	N / A	Eliminated
061	SP061	Once per month	Seasonal	No discharge during winter months. Infrequent use during summer months only when no glycol present.
081	SP081	Once per month	Seasonal	No discharge during winter months. Infrequent use during summer months only when no glycol present.
091	SP091	Once per month	N / A	Airport deicing fluids are no longer applied in this basin, flows directed to the West Sewer System.
091A / B	SP091A / B	Measure when discharging	Yes	North Airfield Reservoir Outfall.
101	SP101	Once per month	Yes	Flow has been diverted to the North Detention Basin.
111	N / A	N / A	N / A	Eliminated
112	N / A	N / A	N / A	Eliminated
113	N / A	N / A	N / A	Eliminated
114	SP114	Once per month	Yes	Flows diverted to the East Sewer System.
121	SP121	N / A	N / A	Eliminated
001	SO001	Measure when discharging	Yes	South Detention Basin Outfall
141	SP141	Once per month	No	Slotted Edge Drains constructed to collect Snow Melt. Outfall remains operational.
372	SP373	Once per month	Yes	Grab samples taken once per month.
373	SP373	Once per month	Yes	Grab samples taken once per month.
471	SP471	Once per month	No	Slotted Edge Drains constructed to collect Snow Melt. Outfall remains operational.
WQ1	WQ1	Once per month	N / A	Water Quality Improvements to be completed in 2002.
WQ2	WQ2	Once per month	N / A	Water quality monitoring point for background data on Bensenville Ditch.
WQ3	WQ3	Once per month	N / A	Water quality monitoring point for downstream data on Bensenville Ditch.

Note: N / A = Not Applicable
Source: NPDES Permit No. IL0002283, Illinois Environmental Protection Agency, November 19, 1996.

K.3.4 Sampling Point Data

Detailed sampling data and analysis of groundwater throughout the Airport is included in **Tables K-8** through **K-14**. Water quality samples are taken by the DOA in accordance with both Phase I NPDES permits (IL0002283 and IL0066567); however, as numerous alterations to the sub-basins within each watershed have been completed, the water quality data for each outfall does not represent the same conditions over time. Furthermore, the changes have eliminated some outfalls (021, 031, 041, 071, 111, 112, and 113) since the last issuance of the Phase I NPDES permit IL0002283.

K.4 STORMWATER QUALITY MANAGEMENT IMPROVEMENTS

Stormwater quality management at the Airport addresses both airfield and aircraft deicing activities and all other airport industrial activities, which includes aircraft maintenance and fueling, vehicle maintenance and fueling, and food preparation operations.

K.4.1 Background

The operations at the Airport necessitate a large area of paved and impervious surfaces. As a result, there is a significant amount of stormwater runoff that is generated during rain events and snow and ice conditions. For passenger safety and aircraft operations, during the winter months, snow and ice is removed and stored at various location at the Airport (snow dumps) to melt naturally, or it is artificially melted at designated locations by snow melting equipment. (See **Exhibit 5.7-4** in **Section 5.7, Water Quality,** for snow dump and snow melter locations).

The DOA has a long history of implementing measures to mitigate the potential impacts of Airport deicing agents on the surrounding creeks. Since 1979, the Airport has been treating the majority of the stormwater containing deicing fluids through the South Detention Basin. This Basin has a surface area of approximately 100 acres and an effective storage volume of approximately 1,120 acre-feet. As illustrated in **Exhibit 5.7-1,** the Airport terminal areas drain to the South Detention Basin. Almost all of the aircraft deicing at the Airport occurs in the terminal areas. Aircraft deicing no longer occurs at the end of runways, as improvements in deicing agents have allowed longer hold times for aircraft. Improved weather forecasting, combined with the implementation of aircraft ground stops during periods of snow or icy precipitation, have further reduced the likelihood that deiced aircraft will require additional application of deicing fluids on the runway. Therefore, most of the stormwater containing deicing fluid flows to the South Detention Basin for subsequent wastewater treatment, when needed (see **Exhibits 5.7-2** and **5.7-3)**.

In the North Airfield, stormwater runoff containing deicing fluids currently drains to the North Detention Basins. Stormwater from the detention basins is discharged to a MWRDGC interceptor sewer and eventually reaches the MWRDGC Stickney Wastewater Treatment Plant.

The South Detention Basin may discharge directly to an existing drainage ditch in the Cook County Forest Preserve and then directly into the Des Plaines River when the water quality is in

compliance with the Phase I NPDES permit effluent standards. However, a new connection to the Tunnel and Reservoir Plan system (TARP) allows all non-compliant water to be directed to MWRDGC for treatment, and greatly reduces the chances of discharging non-compliant water. **Table K-6** describes the discharges from the South Detention Basin during the last several years.

TABLE K-6
WATER DISCHARGES TO MWRDGC FROM SOUTH DETENTION BASIN

Year	Discharge (million gallons)	BOD5(a) (pounds)	Total Suspended Solids (pounds)
1991	1,079	2,237,634	288,030
1992	927	2,392,543	235,637
1993	1,179	4,592,539	294,961
1994	822	4,372,047	306,365
1995	1,170	5,424,361	300,540
1996	872	3,876,959	249,446
1997	1,080	5,773,590	285,438
1999	1,141	3,739,103	270,342
2000	N / A	N / A	N / A
2001	N / A	N / A	N / A
2002	1,084	5,548,697	234,210
Average	1039	4,217,497	273,885

Notes: N / A – Data not available.
(a) BOD5 – Biochemical Oxygen Demand expressed in 5 days under standardized conditions.
Source: Environmental Evaluation of Technical Working Reports for the O'Hare Modernization Program - Affected Environment, Appendix D, Table D-1, Landrum & Brown [CCT], November 25, 2003.

Even with the South Detention Basin system in place, in the past there were areas around the perimeter of the Airport where very small amounts of airport deicing agents, almost all of which is road salt, mix with stormwater and are discharged into the various creeks. Water quality sampling conducted by the City prior to 1996 showed that during the deicing season the effluent standards were at times exceeded. Consequently, the City developed a Water Quality Improvement Plan[4] to address the previous problems. This plan was submitted to the IEPA and incorporated into the November 19, 1996, Phase I NPDES permit issued to the City. The improvements provide systems to collect, contain, and discharge the additional stormwater containing deicing agents. The improvements to the South and North Airfield are discussed below.

[4] Water Quality Improvement Plan for Chicago O'Hare International Airport, City of Chicago Department of Aviation Planning Section, November 1995.

K.4.2 South Airfield Drainage Improvements

This project included the construction of:

- New lift station
- Force main for the South Detention Basin
- Improved snow dump facility (Snow Dump 3)
- Slotted drain stormwater collection system

The projects are now complete and the location of these improvements is shown in **Exhibit K-1.** The captured storm- and meltwater is routed to the South Detention Basin. The water collected in the basin is pumped by means of a new larger capacity pump station and force main. The force main extends a distance of approximately 13,600 feet to the existing MWRDGC TARP drop shaft located near the southeast corner of Des Plaines River Road south of Irving Park Road. The force main includes a diversion structure at the junction with River Road. The diversion structure directs the discharge to the MWRDGC Drop Shaft or, when water quality conditions are acceptable, to an existing drainage ditch in the Cook County Forest Preserve and then directly into the Des Plaines River.

The larger lift station and discharge to the MWRDGC TARP system allows the stormwater from the reservoir to be removed more rapidly. The new lift station and MWRDGC outlet reduces the chance of overflow to once every 14.2 years, and reduces the amount of time standing water remains in the basin.

Another element of the project is the installation of slotted edge drains along selected runways and taxiways. The slotted edge drains are constructed along the outside edge of the shoulders of Runways 9L-27R and 4R-22L and Taxiways M, L, and S in drainage areas which previously flowed to Bensenville Ditch or Crystal Creek. The drains capture the glycol-contaminated snowmelt runoff from the pavements and direct the flow to the South Detention Basin. The drains are hydraulically designed to convey an approximate once-a-year storm event. A storm frequency of one year was selected as the drains are expected to capture the deicing fluids from the gradual snow melt of a one-year storm event. The first flush from storm events of greater magnitude overflow the slotted drain system and allow runoff to be collected by the existing surface drainage system.

The South Airfield Drainage Improvement Project does not include certain landside areas where aircraft deicing fluids are not used. For example, stormwater along Mannheim Road flows into various sewer inlets and then north to the Illinois Department of Transportation (IDOT) pump station at the Mannheim/I-190 interchange. From there, a storm sewer directs the water directly to the Des Plaines River. Due to the nature of the drainage patterns in this basin it was not possible to include it in the South Airfield Drainage Improvement Project.

K.4.3 North Airfield Drainage Improvements

The City has recently completed construction on major water quality improvements in the North Airfield. These improvements, along with other proposed improvements, also provide

flood control benefits for the Airport and the downstream communities. These improvements meet the following goals:

- Collect and treat stormwater runoff that may contain airport airside deicing chemicals to allow the City to comply with the US Water Quality Act of 1987 and meet the requirements of the Phase I NPDES Permit issued by the IEPA for discharges to Willow and Willow-Higgins Creek.
- Reduce flood elevations on Willow and Willow Higgins Creek.

The drainage improvements consist of:

- New storm sewers comprise the West, Central, and East Sewer Systems.
- New detention basin facilities (Willow Higgins Basin, a.k.a. Structure 140) comprised of the North Winter Basin, the South Winter Basin, and the Overflow Winter Basin and the Summer Basin.
- Pump station (North Airfield Stormwater Pump Station) and 20-inch force main for flows containing airport airside deicing chemicals.
- Five low flow diversion structures.

The Willow-Higgins Reservoir accepts flow from the North Airfield and from the entire upstream watershed of Willow-Higgins Creek. The reservoir consists of four basins with a total storage volume of 1,405 acre-feet, as shown in **Table K-7.**

TABLE K-7
WILLOW-HIGGINS RESERVOIR STORAGE VOLUMES

Storage Location	Acre-feet
North Winter Basin	45
South & Overflow Winter Basin	189
Summer Basin (to become Structure 140)	1,152
Pipe Storage	19
TOTAL	**1,405**

Source: O'Hare Modernization Program Final Draft Report, CTE Engineers, Inc. [CCT], December 15, 2002.

The area at the northeast end of Runway 4L/22R is approximately 45 acres in size and drains to Willow-Higgins Creek without capturing the Airport deicing fluids.

As Airport airside deicing chemicals are the major pollutants of concern, the drainage system operates differently in the deicing and non-deicing seasons. During the deicing season, stormwater is directed to the basin facilities. During the non-deicing season, stormwater is directed to Willow and Willow-Higgins Creeks. During major storm events, excess flows are directed to the basin to reduce flooding.

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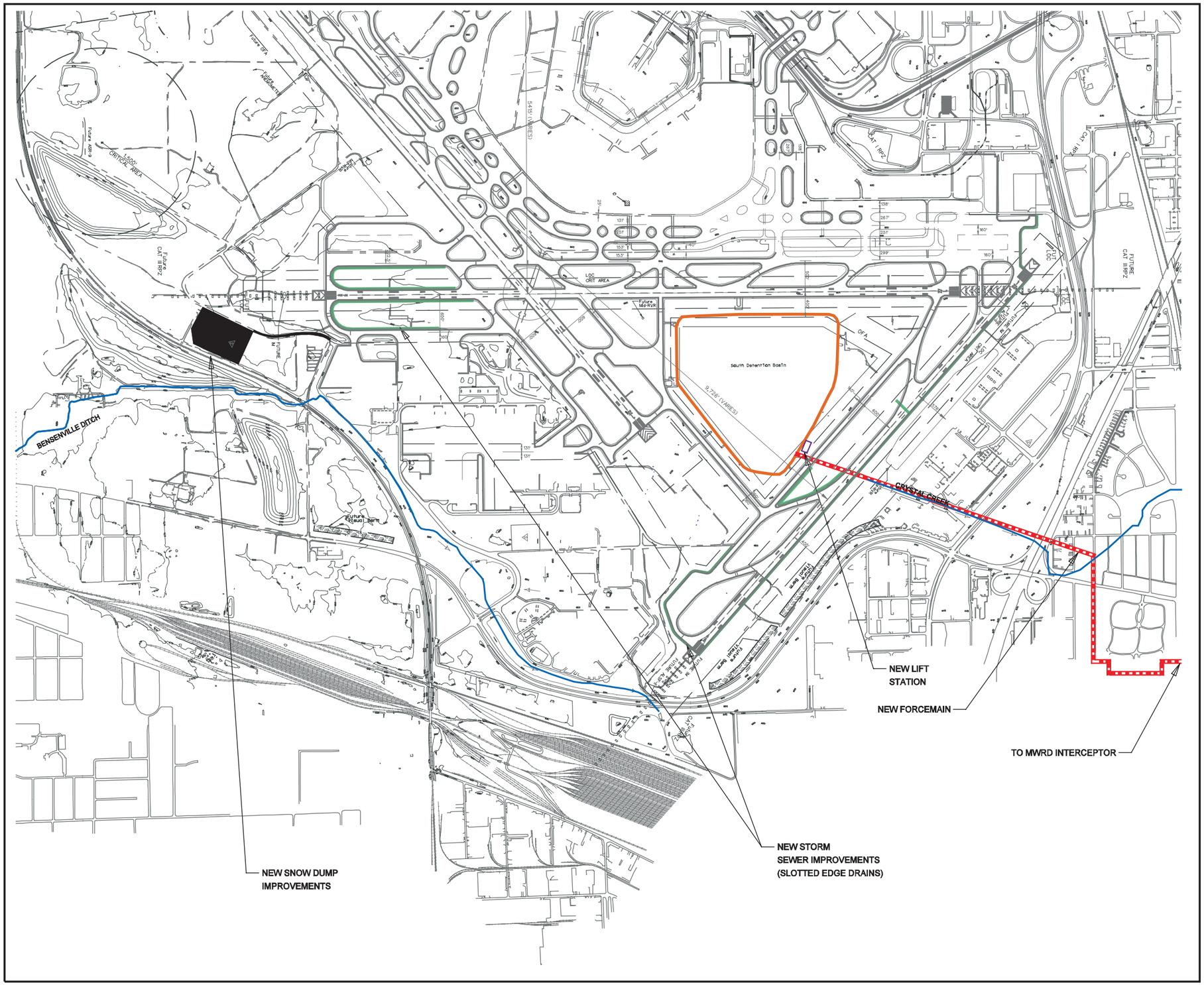

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

- Waters of the United States (WUS)
- Detention Basins
- New Storm Sewer Improvements
- MWRD Interceptor

N
S

South Airfield Drainage Improvements

▶ **Exhibit K-1**

K.4.3.1 Deicing Season

During the deicing season, runoff may contain airport airside deicing chemicals; therefore, stormwater is collected and directed to a basin facility. During deicing season (generally October to April) gates located at the lowflow diversion structures are closed to prevent stormwater from discharging into creeks. This routes stormwater flows to the basin facility. The gates remain closed until the deicing season is over and stormwater meets Phase I NPDES discharge limits. The North Airfield Stormwater Pump Stations pumps the stormwater from the basin facility through a 20-inch diameter force main to MWRDGC interceptor sewer for treatment at the Stickney Wastewater Treatment Plant.

During large rainfall events, water flows from the Winter Basins to the Summer Basin. Flow between the Winter Basins and the Summer Basin is controlled by a weir and discharge control chamber. Flow to the Summer Basin during winter is expected to occur, on average, less than once per year. This water would be recirculated back to the South Winter Basin where it would be pumped to the MWRDGC interceptor sewer for eventual treatment.

During a 100-year storm event, if the water level reaches an elevation of above 640.8 feet above mean sea level in the Basins, water can flow through the Emergency Overflow Pipe into Willow Higgins Creek through outfall W135. The likelihood of this occurring during deicing season in any given year is less than one percent. If the water elevation in the creek is high, valves prevent creek water from backflowing into the Basins.

The new sewers allow the North Airfield stormwater to be directed to the reservoir facility. The North Airfield Stormwater Pump station would transport the stormwater through the force main to an off-site MWRDGC interceptor for treatment during the deicing season, or to Willow-Higgins Creek during the non-deicing season.

K.4.3.2 Non-Deicing Season

In the non-deicing season, runoff does not contain airport airside deicing chemicals; therefore, stormwater is directed to Willow and Willow-Higgins Creek through outfalls W050, W080, W130, W190, and W195. Five low flow diversion structures are opened to allow flow to the creeks. Runoff from a small storm (up to a 3-year rainfall event) is discharged directly to Willow and Willow-Higgins Creek through the low flow diversion structures and runoff from larger storms (in excess of the 3-year rainfall event) flow to the Basin Facility and the creeks. **Exhibit K-2** shows the drainage areas that can be diverted by the low flow non-deicing season diversion structures.

During heavy rainfall events, some stormwater is routed to the Summer Basin to reduce flooding downstream. The Summer Basin currently has a storage volume of 153 acre-feet, and the North Airfield Stormwater Pump Station pumps the stormwater to Willow-Higgins Creek through outfall W135.

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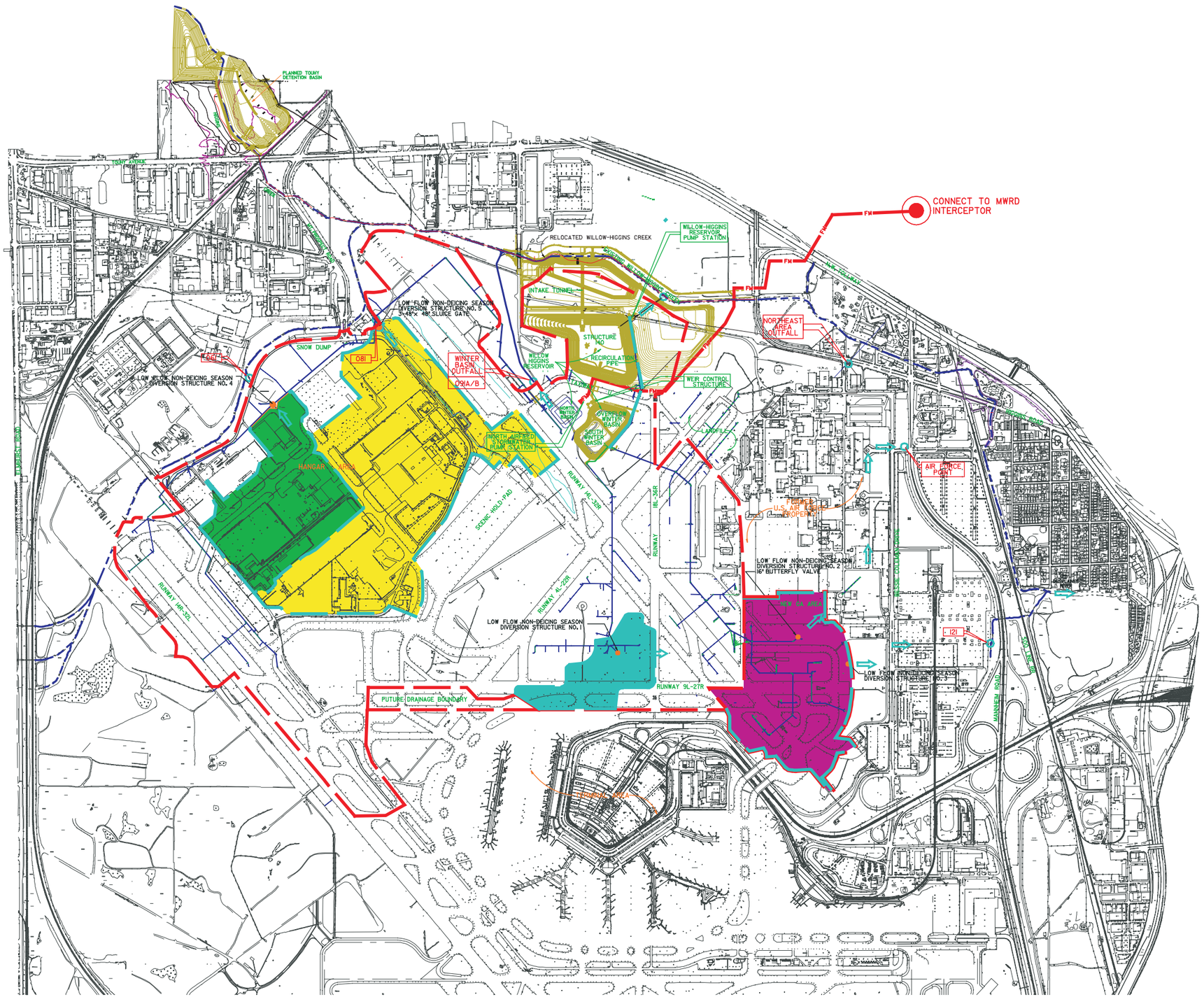

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

- Low Flow Non-Deicing Season Diversion Area
- North Airfield Drainage Boundary
- Northeast Drainage Area
- Proposed Sewer Improvements
- Creek Outfall
- Low Flow Non-Deicing Season Diversion Structure
- Area flows to Diversion Structure No. 4
- Area flows to Diversion Structure No. 5
- Area flows to Diversion Structure No. 1
- Area flows to Diversion Structure No. 2 and 3

N
S

North Airfield Drainage Improvements

▶ **Exhibit K-2**

K.4.4 Snow Dumps and Snowmelters

During snow events, collected snow may be moved to adjacent snow dump locations, trucked to Snow Dumps 1, 3, 7, or 9, or delivered to snowmelters located on-Airport, as illustrated in **Exhibit 5.7-4** in **Section 5.7, Water Quality.**[5] The snow dumps are designed to collect and discharge all the melted snow directly to the North or South Detention Basins, depending on the location of the snow dump. Snow Dump 1 is located along the Hangar Road and is designed to store and melt snow and discharge the runoff into the west storm sewer system which flows to the Winter Basins and from there to the MWRDGC for treatment. Improvement of Snow Dump 1, to accommodate use of a portable snowmelter at that location, was completed during 2001.[6] Snow Dump 3 is a 5.7-acre site located approximately 1,800 feet southwest of the approach to Runway 9R. Glycol contaminated snow is stored at Snow Dump 3; the resulting snowmelt is discharged, by means of a 2,000-foot-long storm sewer, to an existing storm sewer which discharges to the South Detention Basin. Snow Dump 9, built north of the Runway 9R hold pad, is designed to allow snow to melt into the surge pond, which flows to the South Detention Basin. This pad is used primarily for snow accumulated on the Runway 9R holdpad. Occasionally, additional snow may be trucked to this site. Landside Snow Dump 7 and the Backup Snow Dump are designed to store snow removed from roadways and parking lots. Snow is trucked to these locations after being collected. Since these snow dumps are comprised of a combination of paved and grassed areas, they are not connected directly to the Airport storm sewer system. Snowmelt from these two landside snow dumps drains overland and through infiltration, to the Des Plaines River.

Snowmelters are large, mobile, diesel-powered units positioned within the terminal core and at other locations on-Airport that expedite the melting of snow to minimize the volume of stored snow. During snow events, snowmelters are positioned at designated storm sewer inlets. Snow removed from paved surfaces is brought to the snowmelter and placed within the snowmelter's melting tank. The heat generated by the snowmelter engine melts the snow in the melting tank. The snowmelt water is then discharged from the melting tank into the storm sewer inlet and flows through the Airport storm sewers to the South or North Airfield Detention Basins, depending on the location of the snowmelter. The snowmelt water is then discharged from the detention basins for subsequently treatment at MWRDGC.

With the increasing use of snowmelters at the Airport, which reduces the volume of snow needing to be stored on-Airport, the amount of snow storage area required should remain the same or possibly decrease over time. The DOA currently leases the snowmelters used at the Airport and is currently considering the purchase of permanent snow melting units.

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[5] **Exhibit 5.7-4** illustrates all currently functioning snow storage areas. The existing Airport Layout Plan has not been updated to show the current status of the snow storage areas. Some areas designated as snow storage areas on the Airport Layout Plan are not currently used for that purpose.

[6] The City has upgraded Snow Dump 1 to facilitate use of snowmelters as part of its efforts to improve water quality at the Airport. The City's use of snowmelters has reduced the amount of space needed for snow storage.

K.4.5 Pollutant Reduction Program

K.4.5.1 Deicing Fluid Practices

In conjunction with the stormwater management improvements, the Airport is continuing to evaluate means to reduce use of certain deicing fluids and explore new approaches to deicing. These efforts include the switch from ethylene glycol-based fluids to propylene glycol-based fluids, efforts to find an alternative runway deicing fluid products, and various technologies associated with the application of airport deicing fluids. These efforts are summarized below.

K.4.5.2 Change from Ethylene- to Propylene-Based Deicing Fluids

Ethylene glycol, a commonly used airport deicing fluid, is a hazardous substance.[7] The City and several airlines at the Airport have undertaken major efforts to switch from the use of ethylene glycol-based deicing products to propylene glycol-based products. Propylene glycol is not a listed hazardous substance.

K.4.5.3 Department of Aviation Efforts with Alternative Deicing Fluids

The City has been conducting efforts to find alternatives to the use of glycol-based runway deicing fluid (RDF) products. The objective is to find a product that performs similar to or better than propylene glycol/urea runway deicing fluid, that has a lower BOD demand and is not corrosive to the in-pavement lighting system at the Airport. The City has been conducting studies and field tests, but has not had enough positive data to switch to an alternative deicing agent.

K.4.5.4 Runway Deicing Fluid Application Technology

Although the City has worked to develop a test to utilize global positioning systems and advanced technologies to control the application of deicing fluid, there have not been satisfactory results from the current test data to promote this methodology. Under this program a deicing truck would be equipped with computer controls that would regulate the flow of the deicing fluid. The application rates would be controlled remotely from an operations command center. Sensors would be placed in the airfield pavement at various locations to determine conditions such as ambient temperature, pavement temperature, wind speed, dew point, freezing point, and thickness of ice and snow on the pavement. Algorithms would be developed to determine the optimal runway deicing fluids, application times, and rates. The system would also be able to electronically record data on the location and application rate of the fluids. A geographic information system (GIS) would be utilized to compile this information. The recorded information would be compared to field information to determine the effectiveness of the application rates and methods. The City has no current plans to implement this program, due to cost and insufficient data to assure success.

[7] Hazardous substance as defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

K.4.5.5 Aircraft Deicing Fluid Application Technology

The City has formed a committee with the airlines and fixed-based operators that apply aircraft deicing fluids to review current and proposed aircraft deicing fluid application technologies. This committee is working toward reducing the amount of aircraft deicing fluid used at the Airport. The City is also looking at glycol recovery and recycling issues at the Airport.

K.4.6 Other Airport Activities

The City has two major programs to prevent contaminants from other Airport activities from getting into the surrounding creeks. These efforts include the Stormwater Pollution Prevention Plan (SWPPP) and the Spill Prevention Control and Countermeasures Plan (SPCC).

K.4.6.1 Stormwater Pollution Prevention Plan

The City's Phase I NPDES Individual Permit specifies the completion of a SWPPP for the Airport, and the City submitted the plan to the IEPA on August 22, 1997.[8] The SWPPP is a means of ensuring that the stormwater discharges from areas where other Airport industrial activities occur meet the IEPA water quality standards. The SWPPP emphasizes pollution prevention and utilizes Best Management Practices (BMPs) to reduce pollutant loadings and improve water quality. BMPs are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters. The BMPs are methods employed for ensuring environmental management to the greatest possible extent in the prevention of ground, air, and water contamination.

K.4.6.2 Spill Prevention Control and Countermeasures Plans

The SPCC Plan is a requirement of the Oil Pollution Act of 1990, which mandates a spill response system for the proper handling, storage, and transportation of oil. The SPCC Plan establishes procedures, methods and equipment, and other requirements to prevent the discharge of oil from onshore facilities into or upon the navigable water of the United States. A SPCC Plan is required for any entity with a total underground storage tanks (UST) capacity of more than 42,000 gallons or an aboveground storage tank (AST) capacity of 1,320 gallons. The airlines and fueling operators, in addition to the City, are required to prepare and maintain SPCC Plans.[9] The airlines and tenants include Airport Group International, American Airlines, United Airlines, Avis Car Rental, Budget Car Rental, Hertz Car Rental, National Car Rental, Delta Air Lines, Continental Airlines, Evergreen Eagle, Globe Ground, LSG Lufthansa, Sky Chefs, Northwest Airlines, Signature Flight Support, and Federal Express.

[8] The SWPPP is on file with the City of Chicago Department of Aviation.
[9] SPCC Plans are required to be on file with the City of Chicago Department of Aviation.

K.5 GROUNDWATER

The City and municipalities surrounding the Airport have ordinances prohibiting the use of groundwater wells as potable water sources. Lake Michigan is used as the potable water source for Chicago and the other municipalities with similar ordinances.

K.5.1 Geologic Conditions

Both upper glacial deposits and lower bedrock units comprise the regional geologic setting. The glacial deposits largely consist of clay left behind by the advance and recession of the last continental ice sheet. This clay was deposited as moraines and till sheets, including the Valparaiso, Tinley, Park Ridge, Deerfield, Blodgett, and Highland Park till sheets. The Airport is located within the Tinley unit, which consists of clay-like and silty clay till, with few cobbles and boulders. Beneath the Tinley formation lies the Valparaiso moraine soil. The Valparaiso soil contains a larger percentage of sand and gravel than does the Tinley soil. Bedrock lies beneath the Valparaiso soil at roughly 100 feet below the existing surface.

The youngest bedrock below the Valparaiso soil is comprised of Silurian System rocks. The Silurian rocks are almost entirely dolomite, a carbonate sedimentary rock, and lie above Ordovician rocks comprised of other marine rocks, consisting of dolomite, sandstone, limestone, and shale. Below the Ordovician rocks, Cambrian marine rocks largely consisting of dolomite, sandy dolomite, sandstone, and siltstone overlie Precambrian granite rocks, which are found at approximately 4,500 feet below existing grade. These Precambrian granites are the oldest rocks in the area.

K.5.2 Groundwater Sources

The Airport receives its water supply from Lake Michigan, although, historically, municipalities near the Airport used groundwater wells as a source for potable water. The wells were screened in any of four aquifers: 1) the shallow basal "sand and gravel" aquifer; 2) the shallow Silurian Dolomite Aquifer; 3) the Galena-Platteville and Glenwood-St. Peter sandstone Aquifer; and 4) the Elmhurst-Mt. Simon Aquifer. The shallow aquifers are recharged by the seepage of precipitation downward through the soil.

The two classes of groundwater wells in the Chicago area are those dug in the glacial drift to a depth below the water table and those drilled deeper into bedrock. Some state water wells in the area have depths ranging from 32 to 225 feet. As a consequence of historical development of the Chicago area for commercial and industrial purposes, the City and all other municipalities surrounding the Airport now have ordinances in place forbidding the use of groundwater wells as potable water sources. The wells can be used for industrial purposes only.

The Illinois State Water Survey (ISWS) gathered water quality data[10] from the following wells in Cook and DuPage Counties:

- Township 40N, Range 11E, Sections 1, 12, and 13.
- Township 40N, Range 12E, Sections 4-9, 16-18, and 33.
- Township 41N, Range 11E, Sections 25 and 36.
- Township 41N, Range 12E, Sections 31 and 32.

For a representation of the existing conditions of the groundwater in the Airport area, see the following tables:

- **Table K-8**: Groundwater Monitoring Well Data, Group 1
- **Table K-9**: Groundwater Monitoring Well Data, Group 2
- **Table K-10**: Groundwater Monitoring Well Data, Group 3
- **Table K-11**: Groundwater Monitoring Well Data, Group 4
- **Table K-12**: Groundwater Monitoring Well Data, Group 5
- **Table K-13**: Groundwater Monitoring Well Data, Group 6
- **Table K-14**: Groundwater Quality Data Legend for **Tables K-8** through **K-13**

The well locations included in **Tables K-8** through **K-14** are shown in **Exhibit K-3**.

[10] Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, April 30, 2003, regarding data from the groundwater quality database.

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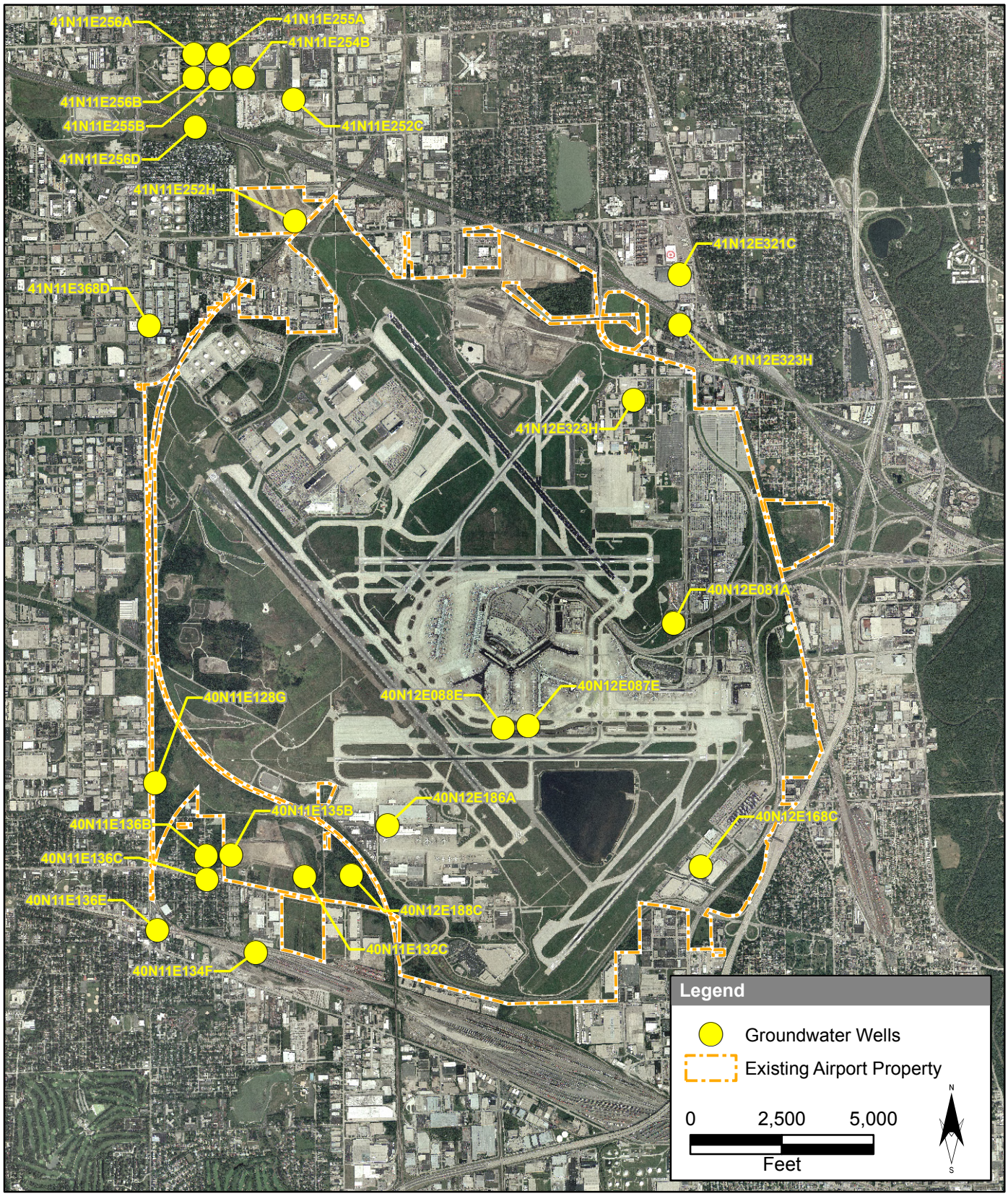

Source: Landrum and Brown, Inc. [CCT], 2002.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Groundwater Monitoring Well Locations

▶ **Exhibit K-3**

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TABLE K-8
GROUNDWATER MONITORING WELL DATA
GROUP 1 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	**40N12E0500**	**40N12E081A**	**40N12E087E**	**40N12E088E**	**40N12E168C**	**40N12E186A**	**40N12E188C**	**40N12E188C**	**40N12E188C**	**40N12E337D**	**40N12E337D**	**40N12E337D**	**40N12E338D**	**40N11E252C**	**41N11E254B**	**41N11E256B**	**41N11E368D**
Plot	**00**	**1A**	**7E**	**8E**	**8C**	**6A**	**8C**	**8C**	**8C**	**7D**	**7D**	**7D**	**8D**	**2C**	**4B**	**6B**	**8D**
Section	**05**	**08**	**08**	**08**	**16**	**18**	**18**	**18**	**18**	**33**	**33**	**33**	**33**	**25**	**25**	**25**	**36**
Range	**12E**	**12E**	**12E**	**12E**	**12E**	**12E**	**12E**	**12E**	**12E**	**12E**	**12E**	**12E**	**12E**	**11E**	**11E**	**11E**	**11E**
Township	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**41N**	**41N**	**41N**
County	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**
Date	**03/01/1941**	**08/01/1967**	**03/01/1930**	**07/01/1943**	**06/01/1958**	**05/01/1966**	**02/01/1957**	**05/01/1970**	**04/15/1981**	**03/01/1942**	**03/01/1942**	**03/01/1942**	**03/01/1942**	**07/27/1979**	**06/01/1961**	**10/01/1961**	**05/01/1958**
Lab Number	**0090084**	**0172714**	**0066361**	**0096608**	**0146992**	**0168988**	**0142624**	**0181497**	**0215581**	**0092588**	**0092590**	**0092591**	**0092589**	**0211491**	**0155185**	**0155830**	**0146608**
Depth	**148**	**200**	**1600**	**90**	**0**	**200**	**1457**	**1457**	**1457**	**1601**	**1601**	**1601**	**1600**	**225**	**1515**	**1515**	**957**
Well Type (a)	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Temp (°C)																	
Turbid. NTU														3			
Color														0			
Odor														0			

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA); 7 = Public well analyzed by IEPA
Well locations 40N12E337D, 40N12E338D, and 40N11E252C are not mapped on **Exhibit K-3** and were not provided by ISWS.

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the groundwater quality database.

TABLE K-8 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 1 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N12E0500	40N12E081A	40N12E087E	40N12E088E	40N12E168C	40N12E186A	40N12E188C	40N12E188C	40N12E188C	40N12E337D	40N12E337D	40N12E337D	40N12E338D	40N11E252C	41N11E254B	41N11E256B	41N11E368D
Lab Number	0090084	0172714	0066361	0096608	0146992	0168988	0142624	0181497	0215581	0092588	0092590	0092591	0092589	0211491	0155185	0155830	0146608
Ox-Red Pot																	
Cond (fld)																	
Cond (lab)																	
Ph												7.3	7.2				
Ph (lab)																	
CO_2																	
Alkalinity	358	128	180	170	136	124	284	260	280	216	232	228	254	112	264	260	260
Ammonia																	
Nitrate, d																	
$NO_2 + NO_3$																	
PO_4 t									< 0.01					0			
PO_4 d														0			
Phos tot																	
C, tot org														2.2			

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA); 7 = Public well analyzed by IEPA
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TABLE K-8 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 1 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N12E0500	40N12E081A	40N12E087E	40N12E088E	40N12E168C	40N12E186A	40N12E188C	40N12E188C	40N12E188C	40N12E337D	40N12E337D	40N12E337D	40N12E338D	40N11E252C	41N11E254B	41N11E256B	41N11E368D
Lab Number	0090084	0172714	0066361	0096608	0146992	0168988	0142624	0181497	0215581	0092588	0092590	0092591	0092589	0211491	0155185	0155830	0146608
Cyanide																	
Hardness	280	354	328	348	520	448	352	346	364	508	376	387	346	348	324	341	312
Ca, d			68.2	74.1					80	108.3			88.9	73.6			68.7
Ca, t																	
Mg, d			38.5	39.2					40	57.9			30.2	40			33.9
Mg, t																	
Na, t																	
Na, d			70						116	48			52	75.6			77
K, d									12					4.6			
K, t																	
Cl, d	9	8	9	8	25	10	35	94	95	11	17	15	25	9	28	29	30
SO_4, d			278	316			171	184	175	366	120		164	370			171
F, d		0.4					0.5	0.6	0.6					0.4	0.4	0.4	0.3
F, t																	

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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA); 7 = Public well analyzed by IEPA
Well locations 40N12E337D, 40N12E338D, and 40N11E252C are not mapped on **Exhibit K-3** and were not provided by ISWS.

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the groundwater quality database.

TABLE K-8 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 1 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N12E0500	40N12E081A	40N12E087E	40N12E088E	40N12E168C	40N12E186A	40N12E188C	40N12E188C	40N12E188C	40N12E337D	40N12E337D	40N12E337D	40N12E338D	40N11E252C	41N11E254B	41N11E256B	41N11E368D
Lab Number	0090084	0172714	0066361	0096608	0146992	0168988	0142624	0181497	0215581	0092588	0092590	0092591	0092589	0211491	0155185	0155830	0146608
SiO_2, d			16						8.5				10	12			8
SiO_2, t																	
As, d																	
As, t																	
Ba, d									< 200					< 50			
Ba, t																	
Be, t																	
B, d									700					700			400
B, t																	
Cd, d									10					0			
Cd, t																	
Cr, d																	
Cr, hex, d																	
Cr, t									< 20					0			
Co, t																	

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TABLE K-8 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 1 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N12E0500	40N12E081A	40N12E087E	40N12E088E	40N12E168C	40N12E186A	40N12E188C	40N12E188C	40N12E188C	40N12E337D	40N12E337D	40N12E337D	40N12E338D	40N11E252C	41N11E254B	41N11E256B	41N11E368D
Lab Number	0090084	0172714	0066361	0096608	0146992	0168988	0142624	0181497	0215581	0092588	0092590	0092591	0092589	0211491	0155185	0155830	0146608
Cu, d									< 50					0			
Cu, t																	
Fe, t	500	100	200	1100	700	500	800	100	300	4800	800	700	300	500	500	400	100
Pb, d									< 50					0			
Pb, t																	
Mn, t		0	0			100			10				0	0	0	0	0
Ni, d														0			
Ni, t																	
Ag, d																	
Ag, t														0			
Sr, d									1490					1920			
Sr, t																	
V, t																	
Zn, d									60					60			

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TABLE K-8 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 1 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N12E0500	40N12E081A	40N12E087E	40N12E088E	40N12E168C	40N12E186A	40N12E188C	40N12E188C	40N12E188C	40N12E337D	40N12E337D	40N12E337D	40N12E338D	40N11E252C	41N11E254B	41N11E256B	41N11E368D
Lab Number	0090084	0172714	0066361	0096608	0146992	0168988	0142624	0181497	0215581	0092588	0092590	0092591	0092589	0211491	0155185	0155830	0146608
Zn, t																	
Al, t																	
Al, d									< 500								
Li, d									< 120					20			
Se, d																	
Se, t																	
TDS	487	752	601	570	931	859	581	678	712	712	532	536	555	684	527	548	555
NH_4, t			0.1						0.6				0.8	0.6			0.9
NO_3, t		0	1.8						< 0.5				1.4	0.2	0	1.2	T
CH_4	U	U	U	U	U	U	U	U		U	U	U	U		U	U	U
H_2S	U	U	U	U	U	U	U	U		U	U	U	U		U	U	0
Hg, d																	
Hg, t																	
Alpha, t																	

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TABLE K-8 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 1 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N12E0500	40N12E081A	40N12E087E	40N12E088E	40N12E168C	40N12E186A	40N12E188C	40N12E188C	40N12E188C	40N12E337D	40N12E337D	40N12E337D	40N12E338D	40N11E252C	41N11E254B	41N11E256B	41N11E368D
Lab Number	0090084	0172714	0066361	0096608	0146992	0168988	0142624	0181497	0215581	0092588	0092590	0092591	0092589	0211491	0155185	0155830	0146608
Alpha, ce																	
Beta, t																	
Beta, ce																	
BrDChlMth																	
C TetraCl																	
1,2-DChlEth																	
Bromoform																	
DiBrChlMth																	
Chlorform																	
Phenols, t																	
Toluene																	
Benzene																	
ChlrBenz																	
ChlrEth																	

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TABLE K-8 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 1 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N12E0500	40N12E081A	40N12E087E	40N12E088E	40N12E168C	40N12E186A	40N12E188C	40N12E188C	40N12E188C	40N12E337D	40N12E337D	40N12E337D	40N12E338D	40N11E252C	41N11E254B	41N11E256B	41N11E368D
Lab Number	0090084	0172714	0066361	0096608	0146992	0168988	0142624	0181497	0215581	0092588	0092590	0092591	0092589	0211491	0155185	0155830	0146608
EthylBenz																	
BrMetha																	
ChlMetha																	
MethylChl																	
TetChlEthy																	
11DiChEtha																	
11DiChEthy																	
111TrChlEt																	
112TrChlEt																	
1122TtrChE																	
12DiChlBen																	
12DiChlPro																	
12DiChlEthyl																	
124TrChlBenz																	

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TABLE K-8 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 1 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N12E0500	40N12E081A	40N12E087E	40N12E088E	40N12E168C	40N12E186A	40N12E188C	40N12E188C	40N12E188C	40N12E337D	40N12E337D	40N12E337D	40N12E338D	40N11E252C	41N11E254B	41N11E256B	41N11E368D
Lab Number	0090084	0172714	0066361	0096608	0146992	0168988	0142624	0181497	0215581	0092588	0092590	0092591	0092589	0211491	0155185	0155830	0146608
MdiChlorBenz																	
PdiChlorBenz																	
Tra13DiChloP																	
Cis13DiChloP																	
DiChlorBenze																	
Vnyl Cl																	
TrChlEthy																	
Elevation														655			
Srf to srf																	
Pump rate																	
12DiChlEthyl																	
Styrene																	
11DiChloProp																	
22DiChloProp																	

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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA); 7 = Public well analyzed by IEPA
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TABLE K-8 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 1 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N12E0500	40N12E081A	40N12E087E	40N12E088E	40N12E168C	40N12E186A	40N12E188C	40N12E188C	40N12E188C	40N12E337D	40N12E337D	40N12E337D	40N12E338D	40N11E252C	41N11E254B	41N11E256B	41N11E368D
Lab Number	0090084	0172714	0066361	0096608	0146992	0168988	0142624	0181497	0215581	0092588	0092590	0092591	0092589	0211491	0155185	0155830	0146608
13DiChloProp																	
12DiChloEthn																	
123TriChlPro																	
1112TChlEtha																	
ChlTol, tot																	
EthylBenzene																	
Benzene																	
Toluene																	
DiBromoMetha																	
Xylene																	
BromoBenzene																	
hrdnss, calc																	
Alk, titrate																	

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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA); 7 = Public well analyzed by IEPA
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TABLE K-9
GROUNDWATER MONITORING WELL DATA
GROUP 2 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	**41N11E368D**	**41N12E321C**	**41N12E321C**	**41N12E321E**	**41N12E323H**	**41N12E252H**	**41N11E252H**	**31N11E252H**	**40N11E128G**	**40N11E134F**	**40N11E135B**	**40N11E135B**	**40N11E136B**	**40N11E136C**	**40N11E136C**	**40N11E138E**	**40N11E138E**
Plot	**8D**	**1C**	**1C**	**1E**	**3H**	**2H**	**2H**	**2H**	**8G**	**4F**	**5B**	**5B**	**6B**	**6C**	**6C**	**8E**	**8E**
Section	**36**	**32**	**32**	**32**	**32**	**25**	**25**	**25**	**12**	**13**	**13**	**13**	**13**	**13**	**13**	**13**	**13**
Range	**11E**	**12E**	**12E**	**12E**	**12E**	**12E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**
Township	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**	**40N**
County	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**DuPage**	**DuPage**	**DuPage**	**DuPage**	**DuPage**	**DuPage**	**DuPage**	**DuPage**	**DuPage**
Date	**12/01/1958**	**03/01/1960**	**05/01/1960**	**06/01/1941**	**02/01/1957**	**09/01/1962**	**06/01/1964**	**11/25/1972**	**05/01/1937**	**07/18/1979**	**01/01/1950**	**01/01/1950**	**03/01/1914**	**06/01/1946**	**06/01/1946**	**02/01/1926**	**11/01/1929**
Lab Number	**0148353**	**0151908**	**0152248**	**0090701**	**0142676**	**0158496**	**0163123**	**0015674**	**0080313**	**0211416**	**0120450**	**0120451**	**0027178**	**0106749**	**0106781**	**0056029**	**0065324**
Depth	**957**	**1422**	**1422**	**150**	**130**	**1815**	**1815**	**1800**	**255**	**140**	**1461**	**1461**	**2290**	**2243**	**2248**	**1445**	**1360**
Well Type (a)	**1**	**1**	**1**	**1**	**1**	**5**	**5**	**7**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Temp (°C)																	
Turbid. NTU										4							
Color										0							
Odor										0							
Ox-Red Pot																	

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TABLE K-9 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 2 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E368D	41N12E321C	41N12E321C	41N12E321E	41N12E323H	41N12E252H	41N11E252H	31N11E252H	40N11E128G	40N11E134F	40N11E135B	40N11E135B	40N11E136B	40N11E136C	40N11E136C	40N11E138E	40N11E138E
Lab Number	0148353	0151908	0152248	0090701	0142676	0158496	0163123	0015674	0080313	0211416	0120450	0120451	0027178	0106749	0106781	0056029	0065324
Cond (fld)																	
Cond (lab)																	
Ph														7.4			
Ph (lab)																	
CO_2															25		
Alkalinity	254	224	224	104	104	216	218	216	166	164	236	236	268	220	272	248	274
Ammonia																	
Nitrate, d																	
$NO_2 + NO_3$																	
PO_4 t										0							
PO_4 d										0							
Phos tot																	
C, tot org										3.5							
Cyanide																	
Hardness	312	300	308	452	360	219	214	186	306	404	300	306	108	232	156	227	276
Ca, d	68					60.9		58	63.5	85.6		80.4		62.3	47.2	61.3	74.3
Ca, t																	

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TABLE K-9 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 2 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E368D	41N12E321C	41N12E321C	41N12E321E	41N12E323H	41N12E252H	41N11E252H	31N11E252H	40N11E128G	40N11E134F	40N11E135B	40N11E135B	40N11E136B	40N11E136C	40N11E136C	40N11E138E	40N11E138E
Lab Number	0148353	0151908	0152248	0090701	0142676	0158496	0163123	0015674	0080313	0211416	0120450	0120451	0027178	0106749	0106781	0056029	0065324
Mg, d	35					16.2		10	35.8	46.3		25.7		18.7	9.3	18.1	22
Mg, t																	
Na, t																	
Na, d								72	58	64.4		50		152	198	55	38
K, d								14		4.4							
K, t																	
Cl, d	31	29	30	9	11	19	21	27	5	6		18	46	160	178	15	14
SO_4, d		162					112	90	247	357		148	46	109	60	73	64
F, d	0.3	0.2	0.2			2	2	1.3		0.4		0.8					
F, t																	
SiO_2, d								7	7	13.5		13		12	16	8	8
SiO_2, t																	
As, d																	
As, t																	
Ba, d								0		< 50							
Ba, t																	
Be, t																	

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TABLE K-9 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 2 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E368D	41N12E321C	41N12E321C	41N12E321E	41N12E323H	41N12E252H	41N11E252H	31N11E252H	40N11E128G	40N11E134F	40N11E135B	40N11E135B	40N11E136B	40N11E136C	40N11E136C	40N11E138E	40N11E138E
Lab Number	0148353	0151908	0152248	0090701	0142676	0158496	0163123	0015674	0080313	0211416	0120450	0120451	0027178	0106749	0106781	0056029	0065324
B, d					400			1000		900							
B, t																	
Cd, d								0		0							
Cd, t																	
Cr, d																	
Cr, hex, d																	
Cr, t								0		0							
Co, t																	
Cu, d								0		10							
Cu, t																	
Fe, t	100	200	700	T	300	1400	400	1500	1000	500		500	100	400	300	200	0
Pb, d								0		10							
Pb, t																	
Mn, t			0		0			50	300	20		0		100	100	0	0
Ni, d								0		10							
Ni, t																	
Ag, d																	

Notes: U = Undetected (below detection limit)
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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-9 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 2 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E368D	41N12E321C	41N12E321C	41N12E321E	41N12E323H	41N12E252H	41N11E252H	31N11E252H	40N11E128G	40N11E134F	40N11E135B	40N11E135B	40N11E136B	40N11E136C	40N11E136C	40N11E138E	40N11E138E
Lab Number	0148353	0151908	0152248	0090701	0142676	0158496	0163123	0015674	0080313	0211416	0120450	0120451	0027178	0106749	0106781	0056029	0065324
Ag, t										0							
Sr, d										2780							
Sr, t																	
V, t																	
Zn, d								0		750							
Zn, t																	
Al, t																	
Al, d																	
Li, d										30							
Se, d																	
Se, t																	
TDS	554	483	513	640	596	411	412	400	542	696		476	430	665	674	372	401
NH_4, t								0.3	0.7	0.3		0.1		0.6	0.2	0.5	0.6
NO_3, t		0.4	0.8					0.4	2	2.4		1.5	1.4	6.3	1.7	0	T
CH_4	U	U	U	U	U	U	U		U		U	U	U	U	0	U	U
H_2S	U	U	U	U	U	U	0		U		U	U	U	U	U	U	U
Hg, d																	

Notes: U = Undetected (below detection limit)
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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section., April 30, 2003. Regarding data from the groundwater quality database.

TABLE K-9 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 2 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E368D	41N12E321C	41N12E321C	41N12E321E	41N12E323H	41N12E252H	41N11E252H	31N11E252H	40N11E128G	40N11E134F	40N11E135B	40N11E135B	40N11E136B	40N11E136C	40N11E136C	40N11E138E	40N11E138E
Lab Number	0148353	0151908	0152248	0090701	0142676	0158496	0163123	0015674	0080313	0211416	0120450	0120451	0027178	0106749	0106781	0056029	0065324
Hg, t																	
Alpha, t																	
Alpha, ce																	
Beta, t																	
Beta, ce																	
BrDChlMth																	
C TetraCl																	
1,2-DChlEth																	
Bromoform																	
DiBrChlMth																	
Chlorform																	
Phenols, t																	
Toluene																	
Benzene																	
ChlrBenz																	
ChlrEth																	
EthylBenz																	

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-9 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 2 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E368D	41N12E321C	41N12E321C	41N12E321E	41N12E323H	41N12E252H	41N11E252H	31N11E252H	40N11E128G	40N11E134F	40N11E135B	40N11E135B	40N11E136B	40N11E136C	40N11E136C	40N11E138E	40N11E138E
Lab Number	0148353	0151908	0152248	0090701	0142676	0158496	0163123	0015674	0080313	0211416	0120450	0120451	0027178	0106749	0106781	0056029	0065324
BrMetha																	
ChlMetha																	
MethylChl																	
TetChlEthy																	
11DiChEtha																	
11DiChEthy																	
111TrChlEt																	
112TrChlEt																	
1122TtrChE																	
12DiChlBen																	
12DiChlPro																	
12DiChlEthyl																	
124TrChlBenz																	
MdiChlorBenz																	
PdiChlorBenz																	
Tra13DiChloP																	
Cis13DiChloP																	

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-9 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 2 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E368D	41N12E321C	41N12E321C	41N12E321E	41N12E323H	41N12E252H	41N11E252H	31N11E252H	40N11E128G	40N11E134F	40N11E135B	40N11E135B	40N11E136B	40N11E136C	40N11E136C	40N11E138E	40N11E138E
Lab Number	0148353	0151908	0152248	0090701	0142676	0158496	0163123	0015674	0080313	0211416	0120450	0120451	0027178	0106749	0106781	0056029	0065324
DiChlorBenze																	
Vnyl Cl																	
TrChlEthy																	
Elevation										675							
Srf to srf										42.78							
Pump rate																	
12DiChlEthyl																	
Styrene																	
11DiChloProp																	
22DiChloProp																	
13DiChloProp																	
12DiChloEthn																	
123TriChlPro																	
1112TChlEtha																	
ChlTol, tot																	
EthylBenzene																	
Benzene																	

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less/greater than shown in results (below/above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-9 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 2 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E368D	41N12E321C	41N12E321C	41N12E321E	41N12E323H	41N12E252H	41N11E252H	31N11E252H	40N11E128G	40N11E134F	40N11E135B	40N11E135B	40N11E136B	40N11E136C	40N11E136C	40N11E138E	40N11E138E
Lab Number	0148353	0151908	0152248	0090701	0142676	0158496	0163123	0015674	0080313	0211416	0120450	0120451	0027178	0106749	0106781	0056029	0065324
Toluene																	
DiBromoMetha																	
Xylene																	
BromoBenzene																	
hrdnss, calc																	
Alk, titrate																	

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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-10
GROUNDWATER MONITORING WELL DATA
GROUP 3 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Plot	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E
Section	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Range	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E
Township	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N
County	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage
Date	11/01/1929	10/01/1932	02/01/1943	08/01/1943	08/01/1943	08/01/1943	08/01/1943	08/01/1943	08/01/1943	08/01/1943	08/01/1943	11/01/1946	05/01/1947	09/01/1954	01/01/1938	02/01/1943	08/01/1943
Lab Number	0065325	0071768	0095363	0097043	0097044	0097045	0097046	0097047	0097048	0097049	0097050	0108416	0110308	0135814	0082769	0095365	0097027
Depth	1310	1445	1445	1445	1445	1445	1445	1445	1445	1445	1445	1430	1445	1445	1442	1442	1442
Well Type(a)	1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Temp (°C)																	
Turbid. NTU																	
Color																	

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Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-10 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 3 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0065325	0071768	0095363	0097043	0097044	0097045	0097046	0097047	0097048	0097049	0097050	0108416	0110308	0135814	0082769	0095365	0097027
Odor																	
Ox-Red Pot																	
Cond (fld)																	
Cond (lab)																	
Ph												7.2	7.2				
Ph (lab)																	
CO_2												30	46				
Alkalinity	190	270	286	272	274	274	272	274	276	272	268	244	272	268	258	162	234
Ammonia																	
Nitrate, d																	
$NO_2 + NO_3$																	
PO_4 t																	
PO_4 d																	
Phos tot																	
C, tot org																	
Cyanide																	
Hardness	398	252	254	262	292	248	255	255	259	255	244	274	276	252	246	414	344

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TABLE K-10 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 3 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0065325	0071768	0095363	0097043	0097044	0097045	0097046	0097047	0097048	0097049	0097050	0108416	0110308	0135814	0082769	0095365	0097027
Ca, d	85	67.6	74.1									73.3			69.5	80	
Ca, t																	
Mg, d	45.3	20.1	16.5									21.8			17.5	51.4	
Mg, t																	
Na, t																	
Na, d	52	59										36			40		
K, d																	
K, t																	
Cl, d	14	15	12	12	11	11	12	13	13	12	14	10	13	13	12	11	13
SO_4, d	291	86	59	66	56	54	56	66	58	58	58	90	60	59	54	437	282
F, d												1	0.8	1.1			
F, t																	
SiO_2, d	10	11										12			11		
SiO_2, t																	
As, d																	
As, t																	
Ba, d																	

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Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-10 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 3 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0065325	0071768	0095363	0097043	0097044	0097045	0097046	0097047	0097048	0097049	0097050	0108416	0110308	0135814	0082769	0095365	0097027
Ba, t																	
Be, t																	
B, d																	
B, t																	
Cd, d																	
Cd, t																	
Cr, d																	
Cr, hex, d																	
Cr, t																	
Co, t																	
Cu, d																	
Cu, t																	
Fe, t	0	T	400									700	100	100	400	1100	
Pb, d																	
Pb, t																	
Mn, t	0	0										T			0		
Ni, d																	

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TABLE K-10 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 3 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0065325	0071768	0095363	0097043	0097044	0097045	0097046	0097047	0097048	0097049	0097050	0108416	0110308	0135814	0082769	0095365	0097027
Ni, t																	
Ag, d																	
Ag, t																	
Sr, d																	
Sr, t																	
V, t																	
Zn, d																	
Zn, t																	
Al, t																	
Al, d																	
Li, d																	
Se, d																	
Se, t																	
TDS	631	410	374									400	406	358	361	705	
NH_3, t	0.5	0.4										0.5			0.2		
NO_3, t	0.6	T										1.7			2		
CH_4	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U

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TABLE K-10 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 3 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0065325	0071768	0095363	0097043	0097044	0097045	0097046	0097047	0097048	0097049	0097050	0108416	0110308	0135814	0082769	0095365	0097027
H_2S	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Hg, d																	
Hg, t																	
Alpha, t																	
Alpha, ce																	
Beta, t																	
Beta, ce																	
BrDChlMth																	
C TetraCl																	
1,2-DChlEth																	
Bromoform																	
DiBrChlMth																	
Chlorform																	
Phenols, t																	
Toluene																	
Benzene																	
ChlrBenz																	

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T = Trace
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TABLE K-10 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 3 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0065325	0071768	0095363	0097043	0097044	0097045	0097046	0097047	0097048	0097049	0097050	0108416	0110308	0135814	0082769	0095365	0097027
ChlrEth																	
EthylBenz																	
BrMetha																	
ChlMetha																	
MethylChl																	
TetChlEthy																	
11DiChEtha																	
11DiChEthy																	
111TrChlEt																	
112TrChlEt																	
1122TtrChE																	
12DiChlBen																	
12DiChlPro																	
12DiChlEthyl																	
124TrChlBenz																	
MdiChlorBenz																	
PdiChlorBenz																	

Notes: U = Undetected (below detection limit)
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< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-10 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 3 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0065325	0071768	0095363	0097043	0097044	0097045	0097046	0097047	0097048	0097049	0097050	0108416	0110308	0135814	0082769	0095365	0097027
Tra13DiChloP																	
Cis13DiChloP																	
DiChlorBenze																	
Vnyl Cl																	
TrChlEthy																	
Elevation																	
Srf to srf																	
Pump rate																	
12DiChlEthyl																	
Styrene																	
11DiChloProp																	
22DiChloProp																	
13DiChloProp																	
12DiChloEthn																	
123TriChlPro																	
1112TChlEtha																	
ChlTol, tot																	

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-10 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 3 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0065325	0071768	0095363	0097043	0097044	0097045	0097046	0097047	0097048	0097049	0097050	0108416	0110308	0135814	0082769	0095365	0097027
EthylBenzene																	
Benzene																	
Toluene																	
DiBromoMetha																	
Xylene																	
BromoBenzene																	
hrdnss, calc																	
Alk, titrate																	

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-11
GROUNDWATER MONITORING WELL DATA
GROUP 4 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Plot	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E	8E
Section	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Range	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E
Township	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N	40N
County	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage	DuPage
Date	08/01/1943	08/01/1943	08/01/1943	08/01/1943	08/01/1943	08/01/1943	08/01/1943	09/01/1946	05/01/1947	11/01/1954	06/01/1965	02/01/1970	10/01/1973	02/26/1975	02/23/1977	04/11/1979
Lab Number	0097028	0097029	0097030	0097031	0097032	0097033	0097034	0107676	0110309	0136270	0166066	0180723	B103322	C006409	B034442	B040849
Depth	1442	1442	1442	1442	1442	1442	1442	1442	1442	1442	1442	1442	1442	1442	1442	1442
Well Type(a)	5	5	5	5	5	5	5	5	5	5	5	5	7	7	7	7
Temp (°C)																
Turbid. NTU																
Color																

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-11 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 4 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0097028	0097029	0097030	0097031	0097032	0097033	0097034	0107676	0110309	0136270	0166066	0180723	B103322	C006409	B034442	B040849
Odor																
Ox-Red Pot																
Cond (fld)																
Cond (lab)																
Ph									7.2				8.3	8.3	7.5	7.6
Ph (lab)																
CO_2									41							
Alkalinity	268	272	270	278	272	266	274	264	272	276	268	264	280	254	284	254
Ammonia																
Nitrate, d																
$NO_2 + NO_3$																
PO_4 t													0	0		
PO_4 d																
Phos tot																
C, tot org																
Cyanide														0	0	< 0.005
Hardness	244	244	248	248	248	248	263	239	252	260	260	240	354	194	323	218

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-11 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 4 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0097028	0097029	0097030	0097031	0097032	0097033	0097034	0107676	0110309	0136270	0166066	0180723	B103322	C006409	B034442	B040849
Ca, d									71.4				81	53	75	69
Ca, t																
Mg, d									17.9				37	15	32	22
Mg, t																
Na, t																
Na, d									45				63	140	57	131
K, d													11.4	12.5	12.7	13.8
K, t																
Cl, d	13	13	13	13	13	13	14	11	13	15	51	79	29	130	37	160
SO_4, d	68	58	59	56	58	59	62	64	57			75	160	75	130	80
F, d									1.2	1	1.3	1.5	0.7	3	1.2	3.8
F, t																
SiO_2, d									12				8	8	8	7.7
SiO_2, t																
As, d													0	0	0	< 1
As, t																
Ba, d													0	100	0	< 50

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T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-11 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 4 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0097028	0097029	0097030	0097031	0097032	0097033	0097034	0107676	0110309	0136270	0166066	0180723	B103322	C006409	B034442	B040849
Ba, t																
Be, t																
B, d													500	700	500	700
B, t																
Cd, d													0	0	0	1
Cd, t																
Cr, d													0	0		
Cr, hex, d													0	0		
Cr, t													0	0	0	< 5
Co, t																
Cu, d													0	0	0	50
Cu, t																
Fe, t								100	400	100	200	100	190	0	100	130
Pb, d													0	0	0	14
Pb, t																
Mn, t									0	T			0	0	10	10
Ni, d													0	0	0	< 50

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-11 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 4 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0097028	0097029	0097030	0097031	0097032	0097033	0097034	0107676	0110309	0136270	0166066	0180723	B103322	C006409	B034442	B040849
Ni, t																
Ag, d													0	0	0	< 5
Ag, t																
Sr, d																
Sr, t																
V, t																
Zn, d													0	0	0	< 5
Zn, t																
Al, t																
Al, d																
Li, d																
Se, d													0	0	0	< 1
Se, t																
TDS								369	378	384	465	514	566	578	490	711
NH_4, t									0.4				0.8	0.59	0.47	0.5
NO_3, t									0.7	0.3			1.3	0.7	0	0.9
CH_4	U	U	U	U	U	U	U	U	U	U	U	U				

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T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-11 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 4 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0097028	0097029	0097030	0097031	0097032	0097033	0097034	0107676	0110309	0136270	0166066	0180723	B103322	C006409	B034442	B040849
H_2S	U	U	U	U	U	U	U	U	U	U	U	U				
Hg, d													0	0	0	< 0
Hg, t																
Alpha, t													2.6	32		
Alpha, ce													2.1	7.1		
Beta, t													13.1	35.7		
Beta, ce													2.5	4.3		
BrDChlMth																
C TetraCl																
1,2-DChlEth																
Bromoform																
DiBrChlMth																
Chlorform																
Phenols, t																
Toluene																
Benzene																
ChlrBenz																

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-11 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 4 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0097028	0097029	0097030	0097031	0097032	0097033	0097034	0107676	0110309	0136270	0166066	0180723	B103322	C006409	B034442	B040849
ChlrEth																
EthylBenz																
BrMetha																
ChlMetha																
MethylChl																
TetChlEthy																
11DiChEtha																
11DiChEthy																
111TrChlEt																
112TrChlEt																
1122TtrChE																
12DiChlBen																
12DiChlPro																
12DiChlEthyl																
124TrChlBenz																
MdiChlorBenz																
PdiChlorBenz																

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-11 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 4 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0097028	0097029	0097030	0097031	0097032	0097033	0097034	0107676	0110309	0136270	0166066	0180723	B103322	C006409	B034442	B040849
Tra13DiChloP																
Cis13DiChloP																
DiChlorBenze																
Vnyl Cl																
TrChlEthy																
Elevation																
Srf to srf																
Pump rate																
12DiChlEthyl																
Styrene																
11DiChloProp																
22DiChloProp																
13DiChloProp																
12DiChloEthn																
123TriChlPro																
1112TChlEtha																
ChlTol, tot																

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-11 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 4 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E	40N11E138E
Lab Number	0097028	0097029	0097030	0097031	0097032	0097033	0097034	0107676	0110309	0136270	0166066	0180723	B103322	C006409	B034442	B040849
EthylBenzene																
Benzene																
Toluene																
DiBromoMetha																
Xylene																
BromoBenzene																
hrdnss, calc																
Alk, titrate																

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-12
GROUNDWATER MONITORING WELL DATA
GROUP 5 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A
Plot	8E	6D	6D	6D	5B	6B	6B	6A	6B	6D	6D	6D	5B	6B	6B	6A
Section	13	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Range	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E	11E
Township	40N	41N	41N	41N	41N	41N	41N	41N	41N	41N	41N	41N	41N	41N	41N	41N
County	DuPage	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook
Date	04/06/1983	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987	10/14/1987
Lab Number	B032698	B716811	B716812	B716826	B716813	B716814	B716815	B716827	B716829	D759921	D759922	D759923	D759928	D759936	D759929	D759934
Depth	1442	185	215	210	200	1515	940	216	176	185	215	210	200	1515	940	216
Well Type(a)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Temp (°C)																

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-12 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 5 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A
Lab Number	B032698	B716811	B716812	B716826	B716813	B716814	B716815	B716827	B716829	D759921	D759922	D759923	D759928	D759936	D759929	D759934
Turbid. NTU																
Color																
Odor																
Ox-Red Pot																
Cond (fld)																
Cond (lab)																
Ph	7.9															
Ph (lab)																
CO_2																
Alkalinity	300	153	153	157	122	257	257	261	149							
Ammonia	0.35	0.58	0.4	0.78	0.13	1	0.78	0.23	0.41							
Nitrate, d																
$NO_2 + NO_3$	< 0.1	< 0.1	< 0.1	< 0.1	0.17	< 0.1	< 0.1	< 0.1	< 0.1							
PO_4 t																
PO_4 d																
Phos tot		0.05	0.02	0.12	0.02	< 0.01	< 0.01	< 0.01	0.02							
C, tot org																

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less/greater than shown in results (below/above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-12 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 5 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A
Lab Number	B032698	B716811	B716812	B716826	B716813	B716814	B716815	B716827	B716829	D759921	D759922	D759923	D759928	D759936	D759929	D759934
Cyanide	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005							
Hardness	219															
Ca, d	56															
Ca, t		78	80	78	79	70	68	69	74							
Mg, d	15.5															
Mg, t		45	46	45	47	35	34	35	43							
Na, t		59	62	59	72	64	64	66	66							
Na, d	194															
K, d	14															
K, t		3.5	3.6	3.6	6.2	8.8	9.1	9.4	3.9							
Cl, d	178	12	11	11	9.9	28	27	36	8.1							
SO_4, d	81	364	363	361	426	182	178	196	370							
F, d	2.69															
F, t		0.38	0.36	0.36	0.4	0.34	0.34	0.3	0.37							
SiO_2, d	7.5															
SiO_2, t		12	12	12	8.5	6.9	7	7.1	11							
As, d	< 1															

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-12 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 5 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A
Lab Number	B032698	B716811	B716812	B716826	B716813	B716814	B716815	B716827	B716829	D759921	D759922	D759923	D759928	D759936	D759929	D759934
As, t		2	1	1	< 1	< 1	< 1	< 1	< 1							
Ba, d	54															
Ba, t		12	12	12	11	18	18	19	13							
Be, t	< 1	< 0.5	< 0.5	< 1	< 0.5	< 0.5	< 0.5	< 1	< 1							
B, d	720															
B, t		702	716	689	665	375	433	440	739							
Cd, d	< 3															
Cd, t		< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3							
Cr, d																
Cr, hex, d																
Cr, t	< 5	6	6	< 5	5	< 5	< 5	6	< 5							
Co, t	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5							
Cu, d	< 3															
Cu, t		< 5	< 5	17	< 5	7	543	24	< 5							
Fe, t	130	346	550	375	< 50	534	< 50	161	449							
Pb, d	< 5															
Pb, t		< 5	< 5	< 5	< 5	8	6	< 5	< 5							

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-12 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 5 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A
Lab Number	B032698	B716811	B716812	B716826	B716813	B716814	B716815	B716827	B716829	D759921	D759922	D759923	D759928	D759936	D759929	D759934
Mn, t	14	8	7	7	5	17	< 5	17	11							
Ni, d	< 3															
Ni, t		< 5	< 5	5	< 5	< 5	12	8	< 5							
Ag, d	< 5															
Ag, t		< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3							
Sr, d																
Sr, t	2080	2078	2119	2073	1671	1985	2107	2110	2086							
V, t	< 4	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5							
Zn, d	14															
Zn, t		< 50	< 50	< 50	< 50	< 50	112	182	265							
Al, t		< 50	< 50	< 50	< 50	< 50	< 50	867	< 50							
Al, d																
Li, d																
Se, d	< 1															
Se, t		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1							
TDS	729	666	678	684	696	542	538	563	644							
NH_4, t																

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-12 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 5 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A
Lab Number	B032698	B716811	B716812	B716826	B716813	B716814	B716815	B716827	B716829	D759921	D759922	D759923	D759928	D759936	D759929	D759934
NO_3, t																
CH_4																
H_2S																
Hg, d	< 50															
Hg, t		< 0.05	< 0.05	< 0.05	< 0.05	0.24	< 0.05	< 0.05	< 0.05							
Alpha, t																
Alpha, ce																
Beta, t																
Beta, ce																
BrDChlMth										< 1	< 1	< 1	< 1	< 1	< 1	2
C TetraCl										< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,2-DChlEth																
Bromoform										< 1	< 1	< 1	< 1	< 1	< 1	2
DiBrChlMth										< 1	< 1	< 1	< 1	< 1	< 1	2
Chlorform										< 1	< 1	< 1	< 1	< 1	< 1	< 1
Phenols, t		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5							
Toluene																

Notes: U = Undetected (below detection limit)
T = Trace
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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-12 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 5 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A
Lab Number	B032698	B716811	B716812	B716826	B716813	B716814	B716815	B716827	B716829	D759921	D759922	D759923	D759928	D759936	D759929	D759934
Benzene																
ChlrBenz										< 1	< 1	< 1	< 1	< 1	< 1	< 1
ChlrEth																
EthylBenz																
BrMetha																
ChlMetha																
MethylChl										< 1	< 1	< 1	< 1	< 1	< 1	< 1
TetChlEthy										< 1	< 1	< 1	< 1	< 1	< 1	< 1
11DiChEtha										< 1	< 1	< 1	< 1	< 1	< 1	< 1
11DiChEthy										< 1	< 1	< 1	< 1	< 1	< 1	< 1
111TrChlEt										< 1	< 1	< 1	< 1	< 1	< 1	< 1
112TrChlEt																
1122TtrChE																
12DiChlBen																
12DiChlPro																
12DiChlEthyl										< 1	< 1	< 1	< 1	< 1	< 1	< 1
124TrChlBenz																

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T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-12 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 5 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A
Lab Number	B032698	B716811	B716812	B716826	B716813	B716814	B716815	B716827	B716829	D759921	D759922	D759923	D759928	D759936	D759929	D759934
MdiChlorBenz																
PdiChlorBenz																
Tra13DiChloP																
Cis13DiChloP																
DiChlorBenze										< 1	< 1	< 1	< 1	< 1	< 1	< 1
Vnyl Cl																
TrChlEthy										< 1	< 1	< 1	< 1	< 1	< 1	< 1
Elevation																
Srf to srf																
Pump rate						150								150		
12DiChlEthyl																
Styrene																
11DiChloProp																
22DiChloProp																
13DiChloProp																
12DiChloEthn										< 1	< 1	< 1	< 1	< 1	< 1	< 1
123TriChlPro																

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T = Trace
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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-12 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 5 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	40N11E138E	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E255B	41N11E256B	41N11E256B	41N11E256A
Lab Number	B032698	B716811	B716812	B716826	B716813	B716814	B716815	B716827	B716829	D759921	D759922	D759923	D759928	D759936	D759929	D759934
1112TChlEtha																
ChlTol, tot																
EthylBenzene										< 1	< 1	< 1	< 1	< 1	< 1	< 1
Benzene										< 1	< 1	< 1	< 1	< 1	< 1	< 1
Toluene										< 1	< 1	< 1	< 1	< 1	< 1	< 1
DiBromoMetha																
Xylene										< 1	< 1	< 1	< 1	< 1	< 1	< 1
BromoBenzene																
hardness, calc		380	387	379	390	320	309	314	364							
Alk, titrate																

Notes: U = Undetected (below detection limit)
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< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-13
GROUNDWATER MONITORING WELL DATA
GROUP 6 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	**41N11E256B**	**41N11E256B**	**41N11E256B**	**41N11E256A**	**41N11E256B**	**41N11E256D**	**41N11E256D**	**41N11E256D**	**41N11E256D**	**41N11E256D**	**41N11E256D**	**41N11E132C**	**41N11E255A**	**41N11E255A**	**41N11E255A**	**41N11E255A**
Plot	**6B**	**6B**	**6B**	**6A**	**6B**	**6D**	**6D**	**6D**	**6D**	**6D**	**6D**	**2C**	**5A**	**5A**	**5A**	**5A**
Section	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**13**	**25**	**25**	**25**	**25**
Range	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**	**11E**
Township	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**	**41N**
County	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**	**Cook**
Date	**10/14/1987**	**03/23/1990**	**03/23/1990**	**03/26/1990**	**03/26/1990**	**09/10/1990**	**09/10/1990**	**09/10/1990**	**05/11/1994**	**05/09/1995**	**05/09/1995**	**09/21/1999**	**03/20/2001**	**03/20/2001**	**03/20/2001**	**01/22/1998**
Lab Number	**D759931**	**B004322**	**B004323**	**B004345**	**B004342**	**B013587**	**B013586**	**B013605**	**B406700**	**B505606**	**D582953**	**231477**	**232179**	**232180**	**232180B**	**0230593**
Depth	**176**	**1515**	**940**	**216**	**176**	**185**	**215**	**210**	**215**	**215**	**215**	**1075**	**1269**	**1515**	**1515**	**1295**
Well Type(a)	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**1**	**5**	**5**	**5**	
Temp (°C)									18.04	17.07	17.07					0
Turbid. NTU												2	13	32	34	0.67
Color												5	5	5	5	5

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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-13 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 6 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E256B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E132C	41N11E255A	41N11E255A	41N11E255A	41N11E255A
Lab Number	D759931	B004322	B004323	B004345	B004342	B013587	B013586	B013605	B406700	B505606	D582953	231477	232179	232180	232180B	0230593
Odor												0	0	0	0	0
Ox-Red Pot									221	196						
Cond (fld)									280	302	302					
Cond (lab)		860	880	940	930	930	931	943								
Ph									6.8	7.33	7.33					
Ph (lab)		7.6	7.7	7.8	7.9	7.7	7.7	7.7				7.1	7.3	7.4	7.5	7.6
CO_2																
Alkalinity		262	256	275	160	151	151	158	143	114						268
Ammonia		0.88	0.61	0.82	0.52	0.52	0.5	0.48	0.52	0.52						
Nitrate, d												< 0.11	< 0.06	< 0.06	< 0.06	< 0.04
$NO_2 + NO_3$		< 0.1	< 0.1	< 0.1	< 0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01						
PO_4 t																
PO_4 d																
Phos tot									< 0.01	< 0.01						
C, tot org																
Cyanide		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.01	< 0.01						
Hardness		340	338	297	340	379	386	386								

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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-13 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 6 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E256B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E132C	41N11E255A	41N11E255A	41N11E255A	41N11E255A
Lab Number	D759931	B004322	B004323	B004345	B004342	B013587	B013586	B013605	B406700	B505606	D582953	231477	232179	232180	232180B	0230593
Ca, d																
Ca, t		80	70	67	77	80.2	79.5	80.1	76	77		105	99.5	86	86.8	86.4
Mg, d																
Mg, t		33	34	34	43	46.1	45.6	46	44	44		43.3	32.3	31	31.1	28.6
Na, t		58	72	87	69	64.2	63.3	65	65	68		188	43.7	45.1	46.4	38.6
Na, d																
K, d																
K, t		9.4	9	10	3.1	4.6	4.3	3.3	3.2	3.4						
Cl, d		28	25	51	10	13	13	13	8.5	7.5		248	24.4	21.7	21.7	23.9
SO_4, d		173	197	168	350	365	364	359	368	313		230	178	150	149	183
F, d												1.3	0.9	0.7	0.7	0.9
F, t		0.52	0.43	0.29	0.32	0.39	0.4	0.38	0.4	0.39						
SiO_2, d																
SiO_2, t		7.1	7.4	7.5	12	14	14	14	13.1	13.2						
As, d																
As, t		< 1	< 1	< 1	< 1	1	1	1	< 1	< 1						
Ba, d																

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-13 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 6 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E256B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E132C	41N11E255A	41N11E255A	41N11E255A	41N11E255A
Lab Number	D759931	B004322	B004323	B004345	B004342	B013587	B013586	B013605	B406700	B505606	D582953	231477	232179	232180	232180B	0230593
Ba, t		19	16	17	13	12	11	12	10	11		40	40	40	40	20
Be, t		< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 1	< 1	< 1	< 1						< 3
B, d																
B, t		278	420	367	659	659	649	644	670	690		690	320	320	330	270
Cd, d																
Cd, t		< 3	< 3	< 3	< 3	< 5	< 5	< 5	< 3	< 3						
Cr, d																
Cr, hex, d																
Cr, t		< 5	< 5	< 5	< 5	7	8	6	< 5	< 5		< 7	< 4	< 4	< 4	< 7
Co, t		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 10						
Cu, d																
Cu, t		< 5	< 5	203	< 5	< 10	< 10	< 10	< 5	12		< 10	< 10	30	30	< 10
Fe, t		346	< 50	< 50	< 50	365	374	410	380	380		190	880	2470	2400	60
Pb, d																
Pb, t		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5						
Mn, t		18	< 5	< 5	15	< 15	< 15	< 15	< 15	< 15		10	20	20	30	20
Ni, d																

Notes: U = Undetected (below detection limit)
T = Trace
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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-13 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 6 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E256B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E132C	41N11E255A	41N11E255A	41N11E255A	41N11E255A
Lab Number	D759931	B004322	B004323	B004345	B004342	B013587	B013586	B013605	B406700	B505606	D582953	231477	232179	232180	232180B	0230593
Ni, t		< 5	< 5	8	< 5	25	< 15	< 15	< 15	< 15			< 10	< 10	< 10	< 31
Ag, d																
Ag, t		< 3	< 3	< 3	< 3	< 5	< 5	< 5	< 3	< 3						
Sr, d																
Sr, t		2525	2195	2126	2170	2200	2200	2300	2000	2100						
V, t		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5						
Zn, d																
Zn, t		< 50	< 100	< 50	< 100	< 50	< 50	< 50	< 100	< 100		140	20	110	110	< 20
Al, t		< 50	< 50	< 50	< 50	< 150	< 150	< 150	< 100	< 100						
Al, d																
Li, d																
Se, d																
Se, t		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1						
TDS		501	508	560	548	563	564	568	167	184		1035	558	524	518	558
NH_4, t																
NO_3, t																
CH_4																

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T = Trace
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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-13 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 6 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E256B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E132C	41N11E255A	41N11E255A	41N11E255A	41N11E255A
Lab Number	D759931	B004322	B004323	B004345	B004342	B013587	B013586	B013605	B406700	B505606	D582953	231477	232179	232180	232180B	0230593
H_2S																
Hg, d																
Hg, t		< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.1	< 0.1	< 0.05	< 0.05						
Alpha, t																
Alpha, ce																
Beta, t																
Beta, ce																
BrDChlMth	< 1										< 0.5					
C TetraCl	< 1										< 0.5					
1,2-DChlEth											< 0.5					
Bromoform	< 1										< 0.5					
DiBrChlMth	< 1										< 0.5					
Chlorform	< 1										< 0.5					
Phenols, t									< 10	< 10						
Toluene											< 0.5					
Benzene											< 0.5					
ChlrBenz	< 1										< 0.5					

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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-13 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 6 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E256B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E132C	41N11E255A	41N11E255A	41N11E255A	41N11E255A
Lab Number	D759931	B004322	B004323	B004345	B004342	B013587	B013586	B013605	B406700	B505606	D582953	231477	232179	232180	232180B	0230593
ChlrEth											< 0.5					
EthylBenz											< 0.5					
BrMetha											< 0.5					
ChlMetha											< 0.5					
MethylChl	< 1										< 0.5					
TetChlEthy	< 1										< 0.5					
11DiChEtha	< 1										< 0.5					
11DiChEthy	< 1										< 0.5					
111TrChlEt	< 1										< 0.5					
112TrChlEt											< 0.5					
1122TtrChE											< 0.5					
12DiChlBen											< 0.5					
12DiChlPro											< 0.5					
12DiChlEthyl	< 1										< 0.5					
124TrChlBenz											< 0.5					
MdiChlorBenz											< 0.5					
PdiChlorBenz											< 0.5					

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(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-13 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 6 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E256B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E132C	41N11E255A	41N11E255A	41N11E255A	41N11E255A
Lab Number	D759931	B004322	B004323	B004345	B004342	B013587	B013586	B013605	B406700	B505606	D582953	231477	232179	232180	232180B	0230593
Tra13DiChloP											< 0.5					
Cis13DiChloP											< 0.5					
DiChlorBenze	< 1															
Vnyl Cl											< 0.5					
TrChlEthy	< 1										< 0.5					
Elevation																
Srf to srf																
Pump rate									67							
12DiChlEthyl											< 0.5					
Styrene											< 0.5					
11DiChloProp											< 0.5					
22DiChloProp											< 0.5					
13DiChloProp											< 0.5					
12DiChloEthn	< 1															
123TriChlPro											< 0.5					
1112TChlEtha											< 0.5					
ChlTol, tot											< 0.5					

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

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TABLE K-13 (CONTINUED)
GROUNDWATER MONITORING WELL DATA
GROUP 6 (SEE TABLE K-14 FOR UNITS OF ANALYSIS) (SEE EXHIBIT K-3 FOR WELL LOCATIONS)

Location	41N11E256B	41N11E256B	41N11E256B	41N11E256A	41N11E256B	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E256D	41N11E132C	41N11E255A	41N11E255A	41N11E255A	41N11E255A
Lab Number	D759931	B004322	B004323	B004345	B004342	B013587	B013586	B013605	B406700	B505606	D582953	231477	232179	232180	232180B	0230593
EthylBenzene	< 1															
Benzene	< 1															
Toluene	< 1															
DiBromoMetha											< 0.5					
Xylene	< 1										< 0.5					
BromoBenzene											< 0.5					
hrdnss, calc		337	316	307	370	389	385	388	369	372		440	382	342	345	
Alk, titrate												283	256	255	256	

Notes: U = Undetected (below detection limit)
T = Trace
< or >: for value less / greater than shown in results (below / above detection limit)
(a) The Well Type column identifies whether the sample was taken from a private water well or a public water supply well. It also identifies the state agency which performed the analysis: 1 = Private well analyzed by Illinois State Water Survey (ISWS); 5 = Public well analyzed by ISWS; 3 = Private well analyzed by Illinois Environmental Protection Agency (IEPA):; 7 = Public well analyzed by IEPA

Source: Correspondence from Susan Chi, Illinois State Water Survey, to Peter Mulvaney, Montgomery Watson Harza, Groundwater Section, April 30, 2003. Regarding data from the ground water quality database.

TABLE K-14
GROUNDWATER QUALITY DATA
LEGEND FOR TABLES K-8 THROUGH K-13

Test Name	Description	Units
Temp (°C)	Water Temperature	Degrees Celsius
Turbid. NTU	Turbidity - Nephelemetric	Degrees Celsius
Color	Color	Platinum Cobalt Units (PCU)
Odor	Odor (Threshold Number At Room Temperature)	PCU
Ox-Red Pot	Oxidation-Reduction Potential	millivolts
Cond (fld)	Conductivity - Field	umhos/cm @ 25 °C
Cond (lab)	Conductivity (Ec)-Lab	umhos/cm @ 25 °C
Ph	Ph (Standard Units)	umhos/cm
Ph (lab)	Ph (Laboratory Units)	umhos/cm
CO_2	Carbon Dioxide, Dissolved	mg/L as CO_2
Alkalinity	Alkalinity, Titration To Ph 4.5	mg/L as $CaCO_3$
Ammonia	Nitrogen, Ammonia Total	mg/L as N
Nitrate, d	Nitrogen, Nitrate, Dissolved	mg/L as N
$NO_2 + NO_3$	Nitrogen, Nitrite Plus Nitrate, Total	mg/L as N
PO_4 t	Phosphate, Total	mg/L as PO_4
PO_4 d	Phosphate, Ortho, Dissolved	mg/L as PO_4
Phos tot	Phosphorus, Total	mg/L as P
C, tot org	Carbon, Organic, Total	mg/L as C
Cyanide	Cyanide, Total	mg/L as Cn
Hardness	Hardness, Total	mg/L as $CaCO_3$
Ca, d	Calcium, Dissolved	mg/L as Ca
Ca, t	Calcium, Total	mg/L as Ca
Mg, d	Magnesium, Dissolved	mg/L as Mg
Mg, t	Magnesium, Total	mg/L as Mg
Na, t	Sodium, Total	mg/L as Na
Na, d	Sodium, Dissolved	mg/L as Na

TABLE K-14 (CONTINUED)
GROUNDWATER QUALITY DATA
LEGEND FOR TABLES K-8 THROUGH K-14

Test Name	Description	Units
K, d	Potassium, Dissolved	mg/L as K
K, t	Potassium, Total	mg/L as K
Cl, d	Chloride, Dissolved	mg/L as Cl
SO_4, d	Sulfate, Dissolved	mg/L as SO_4
F, d	Fluoride, Dissolved	mg/L as F
F, t	Fluoride, Total	mg/L as F
SiO_2, d	Silica, Dissolved	mg/L as $Si0_2$
SiO_2, t	Silica, Total	mg/L as SiO_2
As, d	Arsenic, Dissolved	ug/L as As
As, t	Arsenic, Total	ug/L as As
Ba, d	Barium, Dissolved	ug/L as Ba
Ba, t	Barium, Total	ug/L as Ba
Be, t	Beryllium, Total	ug/L as Be
B, d	Boron, Dissolved	ug/L as B
B, t	Boron, Total	ug/L as B
Cd, d	Cadmium, Dissolved	ug/L as Cd
Cd, t	Cadmium, Total	ug/L as Cd
Cr, d	Chromium, Dissolved	ug/L as Cr
Cr, hex, d	Chromium, Hexavalent, Dissolved	ug/L as Cr
Cr, t	Chromium, Total	ug/L as Cr
Co, t	Cobalt, Total	ug/L as Co
Cu, d	Copper, Dissolved	ug/L as Cu
Cu, t	Copper, Total	ug/L as Cu
Fe, t	Iron, Total	ug/L as Fe
Pb, d	Lead, Dissolved	ug/L as Pb
Pb, t	Lead, Total	ug/L as Pb
Mn, t	Manganese, Total	ug/L as Mn

TABLE K-14 (CONTINUED)
GROUNDWATER QUALITY DATA
LEGEND FOR TABLES K-8 THROUGH K-14

Test Name	Description	Units
Ni, d	Nickel, Dissolved	ug/L as Ni
Ni, t	Nickel, Total	ug/L as Ni
Ag, d	Silver, Dissolved	ug/L as Ag
Ag, t	Silver, Total	ug/L as Ag
Sr, d	Strontium, Dissolved	ug/L as Sr
Sr, t	Strontium, Total	ug/L as Sr
V, t	Vanadium, Total	ug/L as V
Zn, d	Zinc, Dissolved	ug/L as Zn
Zn, t	Zinc, Total	ug/L as Zn
Al, t	Aluminum, Total	ug/L as Al
Al, d	Aluminum, Dissolved	ug/L as Al
Li, d	Lithium, Dissolved	ug/L as Li
Se, d	Selenium, Dissolved	ug/L as Se
Se, t	Selenium, Total	ug/L as Se
Alpha, t	Alpha, Total	pCi/L
Alpha, ce	Alpha, Total, Counting Error	pCi/L
Beta, t	Beta, Total	pCi/L
Beta, ce	Beta, Total, Counting Error	pCi/L
BrDChlMth	Bromodichloromethane, Total	ug/L
C TetraCl	Carbon Tetrachloride, Total	ug/L
1,2-DChlEth	1,2-Dichloroethane, Total	ug/L
Bromoform	Bromoform, Total	ug/L
DiBrChlMth	Dibromochloromethane, Total	ug/L
Chlorform	Chloroform, Total	ug/L
Phenols, t	Phenols, Total	ug/L
Toluene	Toluene, Total	ug/L
Benzene	Benzene, Total	ug/L
ChlrBenz	Chlorobenzene	ug/L

TABLE K-14 (CONTINUED)
GROUNDWATER QUALITY DATA
LEGEND FOR TABLES K-8 THROUGH K-14

Test Name	Description	Units
ChlrEth	Chloroethane	ug/L
EthylBenz	Ethylbenzene	ug/L
BrMetha	Bromomethane, Total	ug/L
ChlMetha	Chloromethane, Total	ug/L
MethylChl	Methylene Chloride	ug/L
TetChlEthy	Tetrachloroethylene	ug/L
11DiChEtha	1,1-Dichloroethane, Total	ug/L
11DiChEthy	1,1-Dichloroethylene	ug/L
111TrChlEt	1,1,1-Trichloroethane	ug/L
112TrChlEt	1,1,2-Trichloroethane	ug/L
1122TtrChE	1,1,2,2-Tetrachloroethane	ug/L
12DiChlBen	1,2 Dichlorobenzene, Total	ug/L
12DiChlPro	1,2-Dichloropropane	ug/L
12DiChlEthyl	Trans-1,2-Dichloroethylene	ug/L
124TrChlBenz	1,2,4-Trichlorobenzene, Total	ug/L
MdiChlorBenz	M-Dichlorobenzene, Total	ug/L
PdiChlorBenz	Para-Dichlorobenzene, Total	ug/L
Tra13DiChloP	Trans-1,3-Dichloropropolene, Total	ug/L
Cis13DiChloP	Cis-1,3-Dichloropropolene, Total	ug/L
DiChlorBenze	Dichlorobenzene	ug/L
Vnyl Cl	Vinyl Chloride, Total	ug/L
TrChlEthy	Trichloroethylene, Total	ug/L
TDS	Residue, Total Filterable @180 °C	mg/L
NH_4, t	Nitrogen, Ammonia, Total	mg/L as NH_4
NO_3, t	Nitrogen, Nitrate, Total	mg/L as NO_3
CH_4	Methane	mg/L as CH_4
H_2S	Hydrogen Sulfide	mg/L as H_2S
Hg, d	Mercury, Dissolved	ug/L as Hg

TABLE K-14 (CONTINUED)
GROUNDWATER QUALITY DATA
LEGEND FOR TABLES K-8 THROUGH K-14

Test Name	Description	Units
Hg, t	Mercury, Total	ug/L as Hg
Elevation	Land Surface Elevation	feet
Srf to srf	Depth Below Land Surface (Water Level)	feet
Pump rate	Pumping Rate	gallons per minute (GPM)
12DiChlEthyl	Cis-1,2-Dichloroethylene	ug/L
Styrene	Styrene	ug/L
11DiChloProp	1,1-Dichloropropene	ug/L
22DiChloProp	2,2-Dichloropropane	ug/L
13DiChloProp	1,3-Dichloropropane	ug/L
12DiChloEthn	1,2-Dichloroethane	ug/L
123TriChlPro	1,2,3-Trichloropropane	ug/L
1112TChlEtha	1,1,1,2-Tetrachloroethane	ug/L
ChlTol, tot	Total Chlorotoluenes	ug/L
EthylBenzene	Ethylbenzene	ug/L
Benzene	Benzene	ug/L
Toluene	Toluene	ug/L
DiBromoMetha	Dibromomethane	ug/L
Xylene	Xylene	ug/L
BromoBenzene	Bromobenzene	ug/L
hrdnss, calc	Hardness, Calc	mg/L
Alk, titrate	Alkalinity, Titration To Ph 4.5, Lab (Mg/L As CaCO3)	mg/L as $CaCO_3$