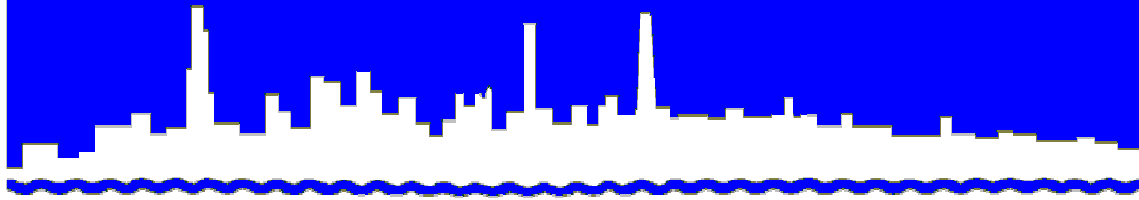


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 12-12

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

FOURTH QUARTER 2011

FEBRUARY 2012

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, Illinois 60611-2803 312-751-5600

**HANOVER PARK WATER RECLAMATION PLANT
FISCHER FARM MONITORING REPORT FOR**

FOURTH QUARTER 2011

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

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Thomas C. Granato, Ph.D.

Director of Monitoring and Research Department
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February 22, 2012

Mr. S. Alan Keller, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794 - 9276

Dear Mr. Keller:

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2007-SC-2951-1, Monitoring Report for October, November, and December 2011

The attached report includes five tables of the monitoring results for the Hanover Park Fischer Farm site for the fourth quarter of 2011.

Very truly yours,

Thomas C. Granato, Ph.D.
Director
Monitoring and Research

TCG:PL:cm

Enclosures

cc: Jay Patel, Manager, IEPA
Region 2 - Des Plaines
Valdis Aistars, USEPA Region 5
Ash Sajjad, USEPA Region 5

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FOREWORD

The data and information in this report fulfill the frequency of monitoring and the reporting requirements for the Hanover Park Fischer Farm Site as specified in the Illinois Environmental Protection Agency Permit No. 2007-SC-2951-1 for the fourth quarter of 2011.

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ACKNOWLEDGEMENT

The assistance given by Ms. Minaxi Patel, Assistant Environmental Chemist, of the Environmental Monitoring and Research Division, and Mr. John Chavich, Supervisory Environmental Chemist, of the John E. Egan Analytical Laboratory Section, is greatly appreciated.

DISCLAIMER

Mention of proprietary equipment and chemicals in this report does not constitute endorsement by the Metropolitan Water Reclamation District of Greater Chicago.

HANOVER PARK WATER RECLAMATION PLANT FISCHER FARM REPORT FOR FOURTH QUARTER OF 2011

During October, November, and December 2011, activities at the Hanover Park Water Reclamation Plant (WRP) Fischer Farm included well and field drainage water sampling, and flow measurements. These monitoring activities are required by the Illinois Environmental Protection Agency Operating Permit No. 2007-SC-2951-1. Fields and water monitoring locations are presented in Figure 1.

Analytical data for well water samples collected during the quarter are presented in Tables 1 and 2.

Drainage water (combined surface and subsurface) returned to the Hanover Park WRP from the farm fields was sampled twice per month in October, November, and December. Analytical data for these samples are presented in Table 3. The volumes of drainage water returned to the WRP during the fourth quarter were estimated as 0.650, 8.30, and 9.43 million gallons in October, November, and December, respectively. The analytical data for the lagoon supernatant and biosolids are presented in Table 4. The volumes and dry weights applied are reported in Table 5.

FIGURE 1: FIELDS AND WELLS AT THE HANOVER PARK FISCHER FARM SITE OF THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

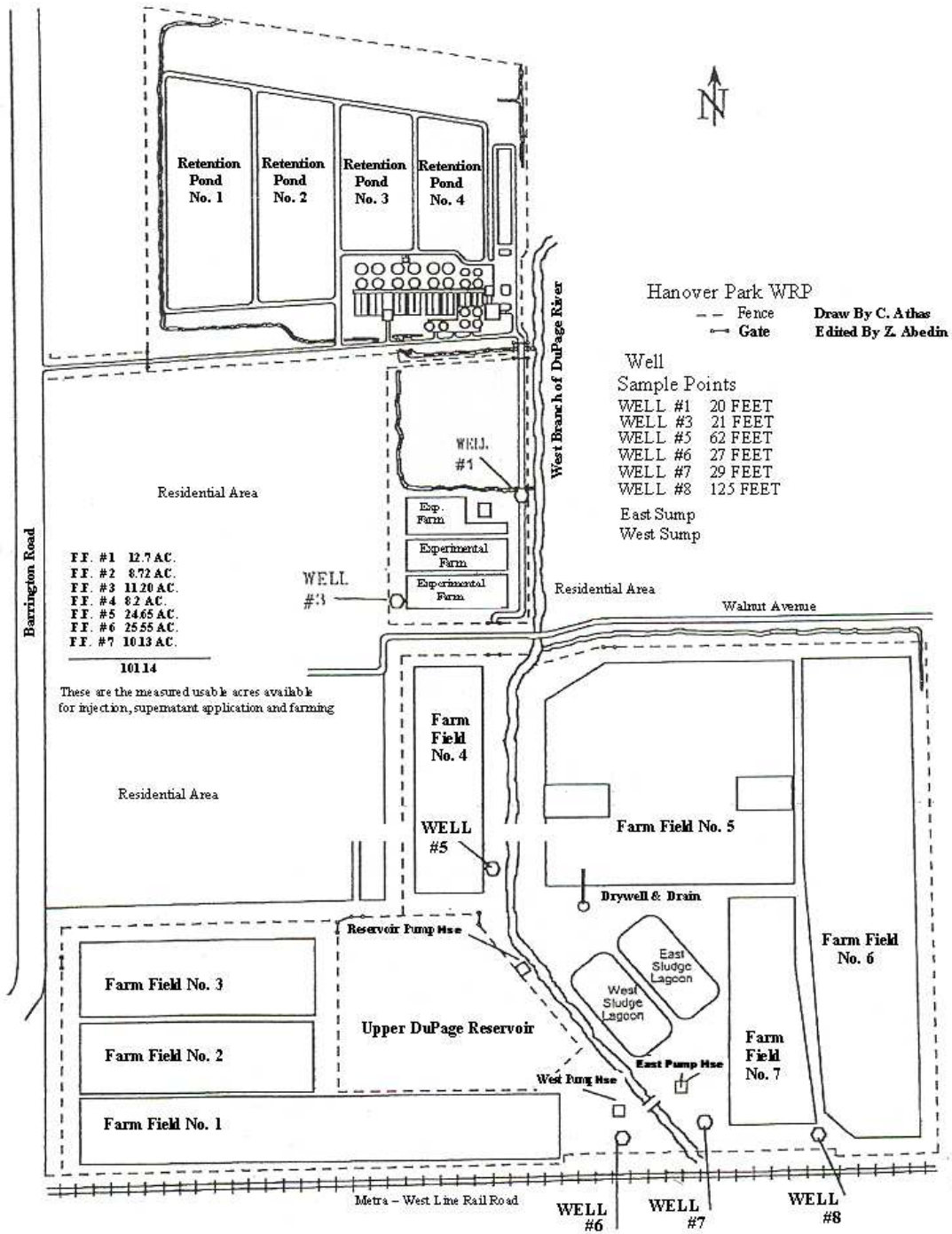


TABLE 1: ANALYSIS OF WATER FROM MONITORING WELL W-7
 AT THE HANOVER PARK FISCHER FARM SITE
 SAMPLED DURING OCTOBER, NOVEMBER, AND DECEMBER 2011

Parameter	Unit	Date Sampled			
		10/18/11	10/25/11	11/15/11	11/29/11
pH ¹		7.0	7.3	7.4	7.3
EC	mS/m	147	141	154	90
Cl ⁻	mg/L	57	56	55	52
SO ₄ ⁼	"	232	218	195	122
Alkalinity as CaCO ₃	"	583	607	596	296
TKN	"	28	30	28	23
NH ₃ -N	"	29	29	29	22
NO ₂ + NO ₃ -N	"	0.14	< 0.04	< 0.04	< 0.04
Total P	"	0.24	0.27	0.13	0.23
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.01	< 0.01	< 0.01	< 0.01
Cu	"	< 0.004	< 0.004	0.009	0.007
Fe	"	5	14	12	3
Mn	"	0.051	0.122	0.159	0.040
Ni	"	< 0.004	< 0.004	< 0.004	< 0.004
Zn	"	0.08	0.36	0.59	< 0.01
Fecal coliform	MPN ²	< 1	< 1	< 1	< 1

TABLE 1 (Continued): ANALYSIS OF WATER FROM MONITORING WELL W-7
 AT THE HANOVER PARK FISCHER FARM SITE
 SAMPLED DURING OCTOBER, NOVEMBER, AND DECEMBER 2011

Parameter	Unit	Date Sampled	
		12/13/11	12/20/11
pH ¹		7.1	6.8
EC	mS/m	143	145
Cl ⁻	mg/L	63	61
SO ₄ ⁼	"	240	239
Alkalinity as CaCO ₃	"	466	483
TKN	"	18	18
NH ₃ -N	"	17	19
NO ₂ + NO ₃ -N	"	< 0.04	< 0.150
Total P	"	0.17	< 0.10
Cd	"	< 0.001	< 0.001
Cr	"	< 0.01	< 0.01
Cu	"	< 0.004	< 0.004
Fe	"	4	5
Mn	"	0.051	0.053
Ni	"	< 0.004	< 0.004
Zn	"	0.05	0.06
Fecal coliform	MPN ²	< 1	< 1

¹pH analyzed beyond recommended holding time of 15 minutes.

²Most probable number per 100 mL.

TABLE 2: ANALYSIS OF WATER FROM MONITORING WELLS W-3
THROUGH W-8 AT THE HANOVER PARK FISCHER FARM SITE
SAMPLED ON NOVEMBER 29, 2011

Parameter	Unit	Monitoring Well No.			
		W-3	W-5	W-6	W-8
pH ¹		7.2	7.3	7.1	8.2
EC	mS/m	87	75	138	59
Cl ⁻	mg/L	20	14	61	6
SO ₄ ⁼	"	159	97	233	50
Alkalinity as CaCO ₃	"	356	312	498	256
TKN	"	0.9	0.4	0.4	0.5
NH ₃ -N	"	< 0.1	0.3	0.2	0.4
NO ₂ + NO ₃ -N	"	0.06	< 0.04	< 0.04	< 0.04
Total P	"	0.20	0.15	0.19	0.16
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.01	< 0.01	< 0.01	< 0.01
Cu	"	< 0.004	0.011	< 0.004	< 0.004
Fe	"	2	2	4	0.6
Mn	"	0.106	0.023	0.049	0.022
Ni	"	< 0.004	< 0.004	< 0.004	< 0.004
Zn	"	0.02	< 0.01	0.04	< 0.01
Fecal coliform	MPN ²	8	< 1	< 1	< 1

¹pH analyzed beyond recommended holding time of 15 minutes.

²Most probable number per 100 mL.

TABLE 3: ANALYSIS OF COMBINED SURFACE AND SUBSURFACE DRAINAGE FROM THE FISCHER FARM SITE RETURNED TO THE HANOVER PARK WATER RECLAMATION PLANT DURING OCTOBER, NOVEMBER, AND DECEMBER 2011

Date	Sump	NH ₃ -N	TSS ¹	BOD ₅
	 mg/L		
10/18/11	East	1	9	2
10/18/11	West	<0.10	11	<2
10/25/11	East	29	122	50
10/25/11	West	4	9	6
11/15/11	East	15	14	10
11/15/11	West	0.8	5	5
11/29/11	East	5	35	9
11/29/11	West	2	3	2
12/13/11	East	37	14	10
12/13/11	West	1	10	3
12/20/11	East	25	725	16
12/20/11	West	10	16	5

¹Total suspended solids.

TABLE 4: ANALYSIS OF LAGOON SUPERNATANT AND BIOSOLIDS
 APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE
 DURING DECEMBER 2011

Parameter	Unit	Concentration ¹
pH		7.7
Total Solids	%	2.5
Total Volatile Solids ²	"	64.7
Volatile Acids ³	mg/kg	1,184
TKN	"	123,290
NH ₃ -N	"	109,744
Total P	"	15,145
As	"	16
Cd	"	1.2
Cr	"	22
Cu	"	786
Hg	"	1.1
Mn	"	655
Mo	"	11
Ni	"	35
Pb	"	20
Se	"	10
Zn	"	684

¹Values are the means of six samples.

²Total volatile solids as a percentage of total solids.

³As acetic acid.

TABLE 5: VOLUMES AND DRY WEIGHTS OF LAGOON SUPERNATANT AND BIOSOLIDS APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE DURING OCTOBER, NOVEMBER, AND DECEMBER 2011

Field	Date	Biosolids Type	Volume (Gallons)	Dry Weight (Tons)
1	10/18/11	Supernatant	290,000	1.69
2	11/04/11	"	290,000	1.81
1	12/08/11	Biosolids	1,306,000	211
2	12/02/11	"	104,000	16.4
3	11/25/11	"	1,945,000	242
5	11/18/11	"	2,535,000	239
6	11/19/11	"	923,000	137
6	11/21/11	"	945,000	159
6	11/22/11	"	759,000	154
Total			9,097,000	1,161.9