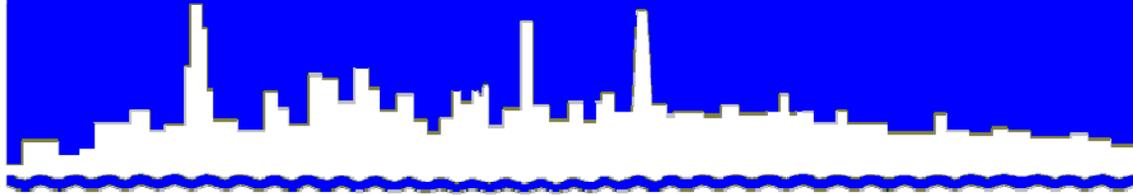


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

*MONITORING AND RESEARCH
DEPARTMENT*

REPORT NO. 13-9

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

FOURTH QUARTER 2012

March 2013

Protecting Our Water Environment

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March 8, 2013

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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. 2012-SC-2255, Monitoring Report for October, November, and December 2012

The attached report includes six tables of the monitoring results for the Hanover Park Fischer Farm site for the fourth quarter of 2012.

Very truly yours,

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

TCG:PL:cm

Enclosures

cc: Mr. J. Patel, Manager, IEPA
Region 2 - Des Plaines
Mr. V. Aistars, USEPA Region 5
Mr. P. Kuefler, USEPA Region 5

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HANOVER PARK WATER RECLAMATION PLANT
FISCHER FARM MONITORING REPORT FOR
FOURTH QUARTER 2012

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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. 2012-SC-2255 for the fourth quarter of 2012.

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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, Supervising 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 2012

During October, November, and December 2012, 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. 2012-SC-2255. 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 0.635, 1.12, and 1.33 million gallons in October, November, and December, respectively. The analytical data for the lagoon supernatant and biosolids are presented in Tables 4 and 5. The volumes and dry weights applied are reported in Table 6.

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

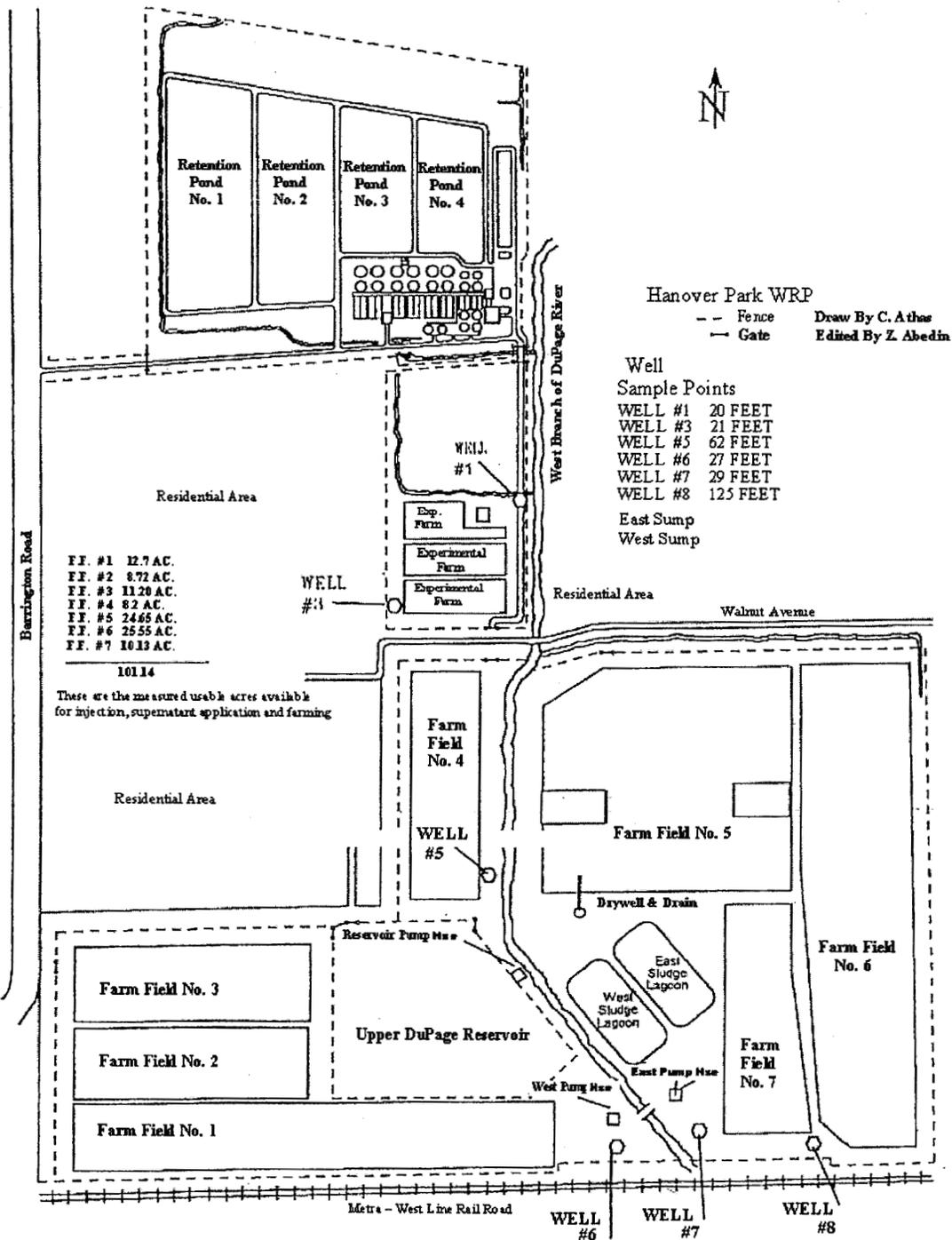


TABLE 1: ANALYSIS OF WATER FROM MONITORING WELL W-7
 AT THE HANOVER PARK FISCHER FARM SITE
 SAMPLED DURING OCTOBER, NOVEMBER, AND DECEMBER 2012

Parameter	Unit	Date Sampled			
		10/02/12	10/16/12	11/13/12	11/27/12
pH ¹		7.2	7.1	7.2	7.3
EC	mS/m	162	152	161	163
Cl ⁻	mg/L	60	61	52	52
SO ₄ ⁼	"	226	233	223	221
Alkalinity as CaCO ₃	"	550	502	585	578
TKN	"	28	26	30	30
NH ₃ -N	"	28	28	30	29
NO ₂ + NO ₃ -N	"	< 0.15	< 0.15	< 0.15	< 0.15
Total P	"	< 0.10	0.11	< 0.10	< 0.10
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005	0.010	< 0.005
Fe	"	4.6	4.4	4.4	5.9
Mn	"	0.052	0.050	0.049	0.072
Ni	"	< 0.005	< 0.005	< 0.005	< 0.005
Zn	"	0.09	0.06	0.07	0.24

TABLE 1 (Continued): ANALYSIS OF WATER FROM MONITORING WELL W-7
 AT THE HANOVER PARK FISCHER FARM SITE
 SAMPLED DURING OCTOBER, NOVEMBER, AND DECEMBER 2012

Parameter	Unit	Date Sampled	
		12/04/12	12/18/12
pH ¹		7.1	7.2
EC	mS/m	134	147
Cl ⁻	mg/L	51	52
SO ₄ ⁼	"	233	238
Alkalinity as CaCO ₃	"	577	593
TKN	"	32	31
NH ₃ -N	"	30	30
NO ₂ + NO ₃ -N	"	< 0.15	< 0.15
Total P	"	< 0.10	0.15
Cd	"	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005
Cu	"	< 0.005	< 0.005
Fe	"	5.1	4.8
Mn	"	0.062	0.053
Ni	"	< 0.005	< 0.005
Zn	"	0.14	0.10

¹pH analyzed beyond recommended holding time of 15 minutes.

TABLE 2: ANALYSIS OF WATER FROM MONITORING WELLS
W-5, W-6 AND W-8 AT THE
HANOVER PARK FISCHER FARM SITE SAMPLED ON OCTOBER 2, 2012

Parameter ¹	Unit	Monitoring Well No.		
		W-5	W-6	W-8
pH ¹		7.3	7.3	8.3
EC	mS/m	82	91	62
Cl ⁻	mg/L	16	30	< 10
SO ₄ ⁼	"	97	125	55
Alkalinity as CaCO ₃	"	312	302	264
TKN	"	< 1	< 1	< 1
NH ₃ -N	"	0.3	0.2	0.4
NO ₂ + NO ₃ -N	"	< 0.15	< 0.15	< 0.15
Total P	"	< 0.10	0.14	< 0.10
Cd	"	< 0.001	< 0.001	< 0.001
Cr	"	< 0.005	< 0.005	< 0.005
Cu	"	0.011	0.009	0.006
Fe	"	2.9	3.0	0.49
Mn	"	0.021	0.042	0.025
Ni	"	< 0.005	< 0.005	< 0.005
Zn	"	< 0.01	< 0.01	< 0.01

¹pH analyzed beyond recommended holding time of 15 minutes.

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 2012

Date	Sump	NH ₃ -N	TSS ¹	BOD ₅
..... mg/L				
10/02/12	East	204	23	21
10/02/12	West	36	12	59
10/16/12	East	67	168	120
10/16/12	West	45	184	141
11/13/12	East	42	29	26
11/13/12	West	39	71	32
11/27/12	East	6.0	5	3
11/27/12	West	0.11	12	5
12/04/12	East	14	<4	5
12/04/12	West	<0.10	4	<2
12/18/12	East	4.9	4	4
12/18/12	West	0.29	19	10

¹Total suspended solids.

TABLE 4: ANALYSIS OF LAGOON SUPERNATANT APPLIED TO FIELDS
 AT THE HANOVER PARK FISCHER FARM SITE
 DURING OCTOBER 2012

Parameter	Unit	Concentration ¹
pH		7.97
Total Solids	%	0.18
Total Volatile Solids ²	"	60.1
Volatile Acids ³	mg/L	5
TKN	"	568
NH ₃ -N	"	394
Total P	"	81
As	"	<0.05
Cd	"	<0.001
Cr	"	<0.005
Cu	"	0.09
Hg	"	<0.20
Mn	"	0.191
Mo	"	<0.01
Ni	"	0.034
Pb	"	<0.02
Se	"	0.03
Zn	"	0.14

¹Values are for one sample only.

²Total volatile solids as a percentage of total solids.

³As acetic acid.

TABLE 5: ANALYSIS OF LAGOON BIOSOLIDS APPLIED TO FIELDS
AT THE HANOVER PARK FISCHER FARM SITE
DURING NOVEMBER 2012

Parameter	Unit	Concentration ¹
pH		7.7
Total Solids	%	3.5
Total Volatile Solids ²	"	60.7
Volatile Acids ³	mg/kg	1,122
TKN	"	70,720
NH ₃ -N	"	27,156
Total P	"	24,429
As	"	15
Cd	"	2
Cr	"	39
Cu	"	860
Hg	"	1.6
Mn	"	732
Mo	"	12
Ni	"	36
Pb	"	28
Se	"	6
Zn	"	816

¹Values are the means of three samples.

²Total volatile solids as a percentage of total solids.

³As acetic acid.

TABLE 6: VOLUMES AND DRY WEIGHTS OF LAGOON SUPERNATANT AND BIOSOLIDS APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE DURING OCTOBER AND NOVEMBER 2012

Field	Date	Biosolids Type	Volume (Gallons)	Dry Weight (Tons)
5	10/15/12	Supernatant	180,000	1.36
1	11/15/12	Biosolids	720,000	123
2	11/13/12	"	900,000	169
3	11/10/12	"	310,000	59.6
3	11/12/12	"	590,000	111
5	11/06/12	"	880,000	142
5	11/07/12	"	1,060,000	179
6	11/03/12	"	1,150,000	201
6	11/06/12	"	1,420,000	249
Total			7,210,000	1,235