

Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 10-44

***HANOVER PARK WATER RECLAMATION PLANT
FISCHER FARM MONITORING REPORT FOR
SECOND QUARTER 2010***

AUGUST 2010

Protecting Our Water Environment

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August 20, 2010

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, Monitoring Report for April, May, and June 2010

The attached report includes five tables of the monitoring results for the Hanover Park Fischer Farm site for the second quarter of 2010. Well 7 is monitored bi-weekly and all other wells are monitored quarterly.

Very truly yours,

Louis Kollias
Director
Monitoring and Research

LK:PL:kq
Enclosures

cc: Mr. Jay Patel, Manager, IEPA Region 2 - Des Plaines
Mr. Valdis Aistars, USEPA Region 5
Mr. 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 second quarter of 2010.

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ACKNOWLEDGEMENT

The assistance given by Ms. Minaxi Patel, Sanitary Chemist I, of the Environmental Monitoring and Research Division, and Mr. John Chavich, Sanitary Chemist IV, 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 SECOND QUARTER OF 2010

During April, May, and June 2010, 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 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 April, May, and June. Analytical data for these samples are presented in Table 3. The volumes of drainage water returned to the WRP during the second quarter were estimated as 7.00, 11.59, and 1.83 million gallons in April, May, and June, respectively. The analytical data for the lagoon 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

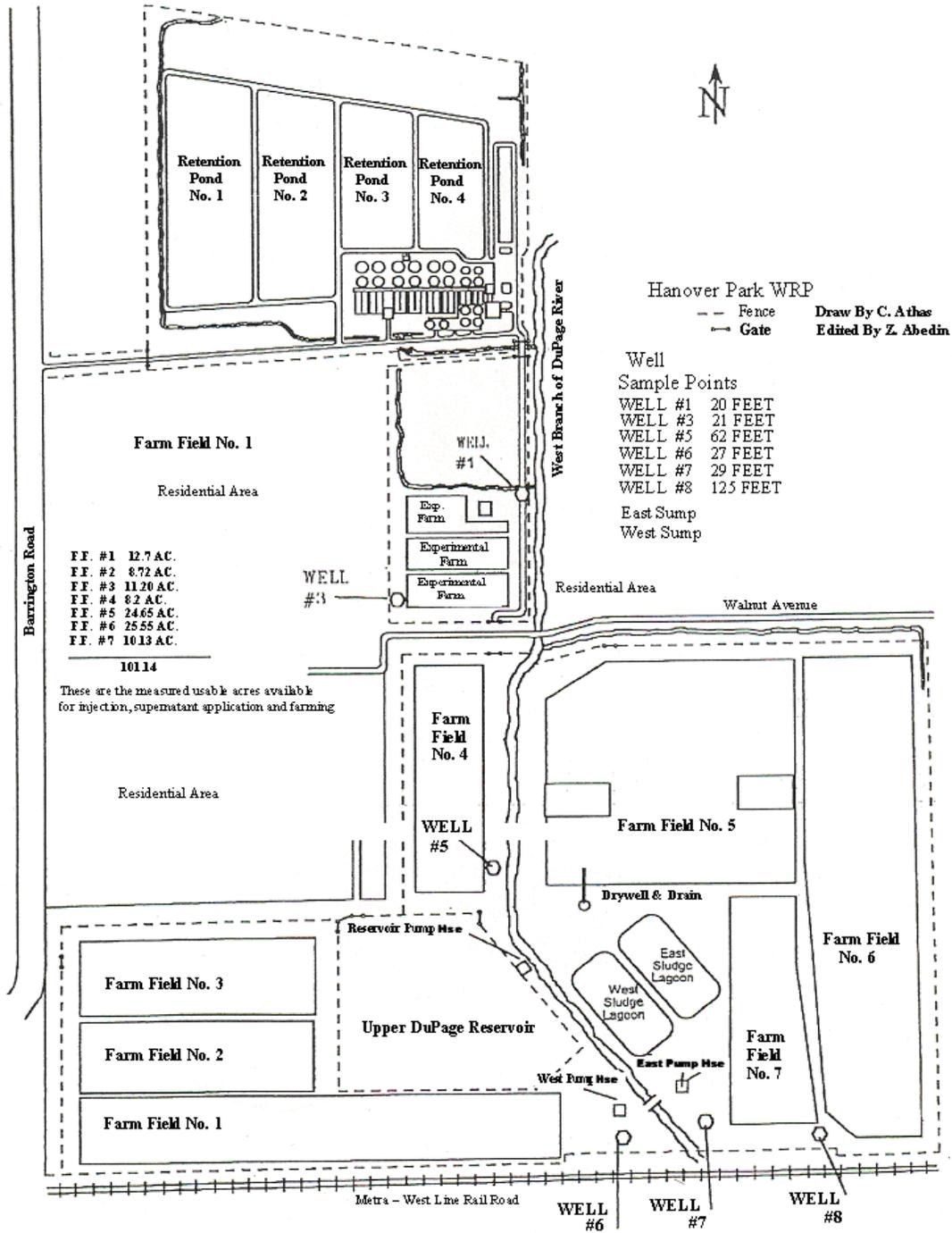


TABLE 1: ANALYSIS OF WATER FROM MONITORING WELL W-7
AT THE HANOVER PARK FISCHER FARM SITE
SAMPLED DURING APRIL, MAY, AND JUNE 2010

Parameter	Unit	Date Sampled			
		04/13/10	04/27/10	05/11/10	05/25/10
pH ²		7.2	7.2	7.2	7.3
EC	mS/m	116	137	141	135
Cl ⁻	mg/L	63	62	61	61
SO ₄ ⁼	"	218	224	236	230
Alkalinity as CaCO ₃	"	464	454	489	465
TKN	"	9	10	10	9
NH ₃ -N	"	8.9	9.1	9.8	9.4
NO ₂ + NO ₃ -N	"	< 0.135	< 0.135	< 0.135	< 0.135
Total P	"	< 0.1	< 0.1	< 0.1	< 0.1
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.01	< 0.01	< 0.01	< 0.01
Cu	"	< 0.004	< 0.004	< 0.004	< 0.004
Fe	"	5.7	4.7	4.7	4.6
Mn	"	0.08	0.06	0.06	0.06
Ni	"	< 0.004	< 0.004	< 0.004	< 0.004
Zn	"	0.14	0.05	0.05	0.04
Fecal coliform	MPN ³	1	1	1	1

TABLE 1: (Continued) ANALYSIS OF WATER FROM MONITORING WELL W-7
 AT THE HANOVER PARK FISCHER FARM SITE
 SAMPLED DURING APRIL, MAY, AND JUNE 2010

Parameter	Unit	Date Sampled	
		06/01/10	06/15/10
pH ²		7.3	7.4
EC	mS/m	136	141
Cl ⁻	mg/L	62	60
SO ₄ ⁼	"	224	222
Alkalinity as CaCO ₃	"	483	530
TKN	"	10	11
NH ₃ -N	"	9.2	11
NO ₂ + NO ₃ -N	"	< 0.135	< 0.135
Total P	"	< 0.1	< 0.1
Cd	"	< 0.001	< 0.001
Cr	"	< 0.01	< 0.01
Cu	"	< 0.004	< 0.004
Fe	"	5.0	5.0
Mn	"	0.06	0.06
Ni	"	< 0.004	< 0.004
Zn	"	0.07	0.04
Fecal coliform	MPN ³	1	1

¹Limit of quantitation (LOQ) instead of minimum detection limit (MDL) used as a reporting limit.

²pH analyzed beyond recommended holding time of 15 minutes.

³Most probable number.

TABLE 2: ANALYSIS OF WATER FROM MONITORING WELLS W-3
THROUGH W-8 AT THE HANOVER PARK FISCHER FARM SITE
SAMPLED ON JUNE 15, 2010

Parameter ¹	Unit	Monitoring Well No.			
		W-3	W-5	W-6	W-8
pH ²		7.8	7.8	7.8	8.3
EC	mS/m	93	76	91	59
Cl ⁻	mg/L	20	15	21	7
SO ₄ ⁼	"	160	99	166	44
Alkalinity as CaCO ₃	"	365	322	339	278
TKN	"	< 0.3	< 0.3	< 0.3	0.5
NH ₃ -N	"	< 0.10	0.28	0.28	0.45
NO ₂ + NO ₃ -N	"	< 0.135	< 0.135	< 0.135	< 0.135
Total P	"	< 0.1	< 0.1	< 0.1	< 0.1
Cd	"	< 0.001	< 0.001	< 0.001	< 0.001
Cr	"	< 0.01	< 0.01	< 0.01	< 0.01
Cu	"	0.005	0.009	0.023	0.005
Fe	"	6.5	2.0	7.2	0.68
Mn	"	0.33	< 0.03	0.06	< 0.03
Ni	"	< 0.004	< 0.004	< 0.004	< 0.004
Zn	"	0.02	< 0.01	< 0.01	< 0.01
Fecal coliform	MPN ³	2	1	1	1

¹Limit of quantitation (LOQ) instead of minimum detection limit (MDL) used as a reporting limit.

²pH analyzed beyond recommended holding time of 15 minutes.

³Most probable number.

TABLE 3: ANALYSIS OF COMBINED SURFACE AND SUBSURFACE DRAINAGE FROM THE FISCHER FARM SITE RETURNED TO THE HANOVER PARK WATER RECLAMATION PLANT DURING APRIL, MAY, AND JUNE 2010

Date	Sump	NH ₃ -N	TSS ¹	BOD ₅
	 mg/L		
04/13/10	East	5.1	444	21
04/13/10	West	1.6	4	3
04/27/10	East	1.8	8	6
04/27/10	West	2.5	13	9
05/11/10	East	4.7	191	23
05/11/10	West	5.9	93	25
05/25/10	East	5.6	6	4
05/25/10	West	0.25	66	6
06/01/10	East	8.5	17	10
06/01/10	West	<0.10	6	<2
06/15/10	East	8.1	21	3
06/15/10	West	<0.10	6	<2

¹Total suspended solids.

TABLE 4: ANALYSIS OF LAGOON BIOSOLIDS APPLIED TO FIELDS
AT THE HANOVER PARK FISCHER FARM SITE
DURING APRIL 2010

Parameter	Unit	Concentration ¹
pH		7.5
Total Solids	%	2.4
Total Volatile Solids ²	"	68.9
Volatile Acids ³	mg/kg	1,383
TKN	"	83,209
NH ₃ -N	"	34,783
Total P	"	25,170
As	"	13
Cd	"	< 2
Cr	"	38
Cu	"	1,177
Hg	"	2.4
Mn	"	782
Mo	"	13
Ni	"	52
Pb	"	30
Se	"	6
Zn	"	847

¹Values are the means of three samples.

²Total volatile solids as a percentage of total solids.

³As acetic acid.

TABLE 5: VOLUMES AND DRY WEIGHTS OF LAGOON BIOSOLIDS
 APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE
 DURING APRIL 2010

Field	Date	Biosolids Type	Volume (Gallons)	Dry Weight (Tons)
1	04/02/10	Biosolids	653,952	36.54
1	04/03/10	''	277,900	15.53
1	04/15/10	''	108,100	13.43
1	04/16/10	''	491,229	60.63
2	04/03/10	''	301,164	16.83
2	04/15/10	''	615,244	76.45
3	04/03/10	''	226,900	12.68
3	04/04/10	''	235,300	41.5
3	04/13/10	''	237,053	32.62
3	04/14/10	''	224,787	41.24
3	04/15/10	''	214,400	26.65
5	04/04/10	''	481,811	84.99
5	04/10/10	''	873,014	61.89
5	04/11/10	''	324,127	23.12
5	04/13/10	''	280,400	38.58
6	04/11/10	''	672,900	47.98
6	04/12/10	''	911,119	125.76
6	04/13/10	''	150,600	20.73
Total			7,280,000	777.15