Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 21-17

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

FIRST QUARTER 2021

May 2021

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

CECIL LUE-HING RESEARCH AND DEVELOPMENT COMPLEX
6001 WEST PERSHING ROAD CICERO, ILLINOIS 60804-4112

Edward W. Podczerwinski, P.E.
Director of Monitoring and Research

May 13, 2021

Ms. Catherine Siders
Illinois Environmental Protection Agency
Bureau of Water
DWPC Compliance Section #19
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9274

Dear Ms. Siders:

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2016-SC-61315, Monitoring Report for January, February, and March 2021

The attached tables contain the monitoring data for the Hanover Park Water Reclamation Plant (WRP) Fischer Farm site for January, February, and March 2021, as required by Illinois Environmental Protection Agency (IEPA) Operating Permit No. 2016-SC-61315. Analytical data for well water samples collected during the quarter are presented in Table 1.

Drainage water (combined surface and subsurface) returned to the Hanover Park WRP from the farm fields was sampled in January, February, and March 2021, and data for these samples are presented in Table 2. The volumes of drainage water returned to the WRP during the first quarter were estimated as 3.9, 6.4, and 26 million gallons in January, February, and March, respectively. There was no lagoon supernatant or biosolids applied to fields in the first quarter of 2021. Field and water monitoring locations are presented in Figure 1.

Based on the investigation of the high levels of NH_3-N in Well 7, it appears that the source of these high levels is seepage from adjacent lagoons and subsurface drainage associated with supernatant application, both of which have high NH_3-N levels. Management practices have been implemented to reduce biosolids loading in lagoons and cease application of supernatant in the adjacent Farm Field Number 7 in order to reduce the potential for the migration of NH_3-N to Well 7.

The data reported are as follows:

Table 1 Analysis of Water From Monitoring Wells W-3, W-5, W-6, W-7, and W-8 at the Hanover Park Fischer Farm Site Sampled in March 2021.

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

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Table 2 Analysis of Combined Surface and Subsurface Drainage From the Fischer Farm Site Returned to the Hanover Park Water Reclamation Plant During January, February, and March 2021.

Figure 1 Map of Fields and Wells at the Hanover Park Fischer Farm Site of the Metropolitan Water Reclamation District of Greater Chicago.

Very truly yours,

Albert Cox

Albert E. Cox, Ph.D.
Environmental Monitoring and Research Manager
Monitoring and Research Department

AC:BM:cm
Attachments
cc/att: Mr. J. Patel, Manager, IEPA – Des Plaines
Mr. T. Bennett, IEPA
Mr. B. Fleming, IEPA
Mr. J. Colletti, USEPA, Region 5
Mr. P. Kuefler, USEPA, Region 5
Mr. J. Chavich
Mr. B. Kaunelis
Mr. A. Gronski
Dr. H. Zhang

TABLE 1: ANALYSIS OF WATER FROM MONITORING WELLS W-3, W-5, W-6, W-7, AND W-8 AT THE HANOVER PARK FISCHER FARM SITE SAMPLED IN MARCH 2021[1]

Parameter	Unit	Monitoring Well No.				
		W-3	W-5	W-6	W-7	W-8
pH[2]		7.6	7.7	7.7	7.6	8.1
EC	mS m^{-1}	98	62	64	65	51
Cl^-	mg L^{-1}	14	19	22	14	10
SO_4^{2-}	"	376	104	119	159	67
Alkalinity as $CaCO_3$	"	333	308	294	206	271
TKN	"	<1.0	<1.0	<1.0	8.3	<1.0
NH_3-N	"	<0.30	0.34	0.32	6.5	0.42
NO_2^-+NO_3^--N	"	<0.25	<0.25	<0.25	13	<0.25
Total P	"	<0.15	<0.15	<0.15	1.1	<0.15
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	<0.004	<0.004	<0.004	0.006	<0.004
Cu	"	0.009	0.003	0.003	0.026	<0.002
Fe	"	5.0	3.7	1.9	17	0.91
Mn	"	0.048	0.034	0.036	0.13	0.026
Ni	"	0.002	<0.002	<0.002	0.014	<0.002
Zn	"	0.11	<0.010	<0.010	0.57	<0.010

[1]Sampled on March 9, 2021.
[2]pH was measured beyond 15 minutes holding time.

TABLE 2: ANALYSIS OF COMBINED SURFACE AND SUBSURFACE DRAINAGE FROM THE FISCHER FARM SITE RETURNED TO THE HANOVER PARK WATER RECLAMATION PLANT DURING JANUARY, FEBRUARY, AND MARCH 2021

Date[1]	Sump	NH_3-N	TSS[1]	BOD_5
		---------- mg L^{-1} ----------		
01/05/2021	East	4.8	3	7
01/05/2021	West	3.2	31	8
01/19/2021	East	4.0	2	3
01/19/2021	West	4.9	2	19
02/23/2021	East	11	2	3
02/23/2021	West	0.49	2	5
02/25/2021	East	3.6	6	14
02/25/2021	West	2.4	4	6
03/09/2021	East	4.4	6	5
03/09/2021	West	4.1	5	4
03/23/2021	East	1.9	5	3
03/23/2021	West	<0.30	5	3

[1]Total suspended solids.

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