Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 17-14

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

FIRST QUARTER 2017

May 2017

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.
Acting Director of Monitoring and Research

May 18, 2017

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. 2016-SC-61315, Monitoring Report for January, February, and March 2017

The attached tables contain the monitoring data for the Hanover Park Water Reclamation Plant (WRP) Fischer Farm site for January, February, and March 2017 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 2017, 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 2.2, 8.6, and 7.8 million gallons in January, February, and March, respectively. No lagoon supernatant or liquid biosolids were applied to Fischer Farm fields in January, February, or March. Field and water monitoring locations are presented in Figure 1.

An investigation of Well 7 was conducted in November 2016 to determine the reason for high NH_3 levels observed in the well. Additional sampling after purging the well indicated a potential persistent source of NH_3. Three temporary monitoring wells will be installed in spring 2017 to monitor groundwater and further investigate the source of NH_3.

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 on February 14, 2017.

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 2017.

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

AC:DB:cm
Attachments
cc/att: Mr. J. Patel, Manager, IEPA – Des Plaines
Mr. J. Colletti, USEPA, Region 5
Mr. P. Kuefler, USEPA, Region 5
Mr. E. Podczerwinski
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Edward W. Podczerwinski, Acting Director

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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 ON FEBRUARY 14, 2017

Parameter	Unit	Monitoring Well No.				
		W-3	W-5	W-6	W-7	W-8
pH[1]		7.9	8.0	7.9	7.7	8.3
EC	mS m^{-1}	99	71	85	169	61
Cl^-	mg L^{-1}	15	15	38	43	8.0
SO_4^{2-}	"	173	95	114	247	61
Alkalinity as $CaCO_3$	"	400	314	309	732	277
TKN	"	1.1	<1.0	<1.0	72	<1.0
NH_3-N	"	<0.10	0.29	0.26	72	0.37
NO_2+NO_3–N	"	<0.15	<0.15	<0.15	<0.15	<0.15
Total P	"	0.21	<0.10	0.13	0.83	<0.10
Cd	"	<0.001	<0.001	<0.001	<0.001	<0.001
Cr	"	0.003	<0.003	0.007	<0.003	<0.003
Cu	"	0.009	0.006	0.005	<0.004	<0.004
Fe	"	2.2	2.6	2.9	3.8	0.77
Mn	"	0.026	0.026	0.043	0.022	0.026
Ni	"	<0.005	<0.005	<0.005	<0.005	<0.005
Zn	"	<0.005	<0.005	<0.005	<0.005	<0.005

[1]pH analyzed beyond recommended holding time of 15 minutes.

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 2017

Date	Sump	NH_3-N	TSS[1]	BOD_5
		---------- mg L^{-1} ----------		
1/24/2017	East	36	54	43
1/24/2017	West	13	52	46
1/31/2017	East	22	6.0	5.0
1/31/2017	West	46	5.0	5.0
2/14/2017	East	14	8.0	4.0
2/14/2017	West	11	8.0	6.0
2/28/2017	East	6.7	<4.0	<2.0
2/28/2017	West	8.8	<4.0	<4.0
3/21/2017	East	5.3	<4.0	<2.0
3/21/2017	West	3.0	<4.0	5.0
3/28/2017	East	1.5	6.0	4.0
3/28/2017	West	2.7	<4.0	6.0

[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