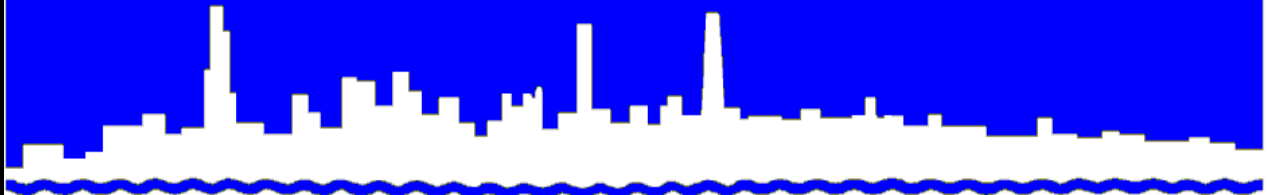


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 19-21

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

SECOND QUARTER 2019

September 2019

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

September 11, 2019

Mr. Roger Callaway
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 Mr. Callaway:

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2016-SC-61315, Monitoring Report for April, May, and June 2019

The attached tables contain the monitoring data for the Hanover Park Water Reclamation Plant (WRP) Fischer Farm site for April, May, and June 2019 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](#). Well 7 could not be sampled due to pump failure. This pump has been repaired and sampling will resume in the third quarter.

Drainage water (combined surface and subsurface) returned to the Hanover Park WRP from the farm fields was sampled in April, May, and June 2019, and data for these samples are presented in [Table 2](#). The volumes of drainage water returned to the WRP during the second quarter were estimated as 15.8, 51.4, and 8.9 million gallons in April, May, and June, respectively. The analytical data for lagoon supernatant applied to Fischer Farm fields in May and June are presented in [Table 3](#). The volume of supernatant and associated dry weight of biosolids applied are shown in [Table 4](#). Field and water monitoring locations are presented in [Figure 1](#).

Based on the investigation of the high levels of NH₃-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 NH₃-N levels. Management practices are being planned to reduce the loading in adjacent lagoons and application of supernatant in fields to confirm that these are the sources of high NH₃-N in 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 on June 11, 2019.

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2016-SC-61315, Monitoring Report for April, May, and June 2019

Table 2 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 2019.

Table 3 Analysis of Lagoon Supernatant applied to Field at the Hanover Park Fischer Farm Site During May and June 2019.

Table 4 Volumes and Dry Weights of Lagoon Supernatant Applied to Fields During May and June 2019 at the Hanover Park Fischer Farm Site

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
Environmental Monitoring and Research Manager
Monitoring and Research Department

AC:BM:cm

Attachments

cc/att: Mr. J. Patel, Manager, IEPA – Des Plaines

Mr. J. Colletti, USEPA, Region 5

Mr. P. Kuefler, USEPA, Region 5

Mr. J. Chavich

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**HANOVER PARK WATER RECLAMATION PLANT
FISCHER FARM MONITORING REPORT FOR
SECOND QUARTER 2019**

Monitoring and Research Department
Edward W. Podczewinski, Director

September 2019

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 JUNE 11, 2019

Parameter	Unit	Monitoring Well No.				
		W-3	W-5	W-6	W-7 ¹	W-8
pH		7.7	7.6	7.6	NC	8.1
EC	mS m ⁻¹	83	72	76	NC	62
Cl ⁻	mg L ⁻¹	11	18	22	NC	10
SO ₄ ²⁻	"	92	107	123	NC	68
Alkalinity as CaCO ₃	"	394	313	300	NC	271
TKN	"	<1.0	<1.0	<1.0	NC	<1.0
NH ₃ -N	"	<0.30	0.35	0.31	NC	0.46
NO ₂ ⁻ +NO ₃ ⁻ -N	"	<0.25	<0.25	<0.25	NC	<0.25
Total P	"	<0.15	<0.15	<0.15	NC	<0.15
Cd	"	<0.001	<0.001	<0.001	NC	<0.001
Cr	"	<0.002	<0.002	<0.002	NC	<0.002
Cu	"	0.002	0.002	0.002	NC	0.001
Fe	"	3.85	1.96	1.68	NC	0.693
Mn	"	0.307	0.017	0.032	NC	0.020
Ni	"	<0.001	<0.001	<0.001	NC	<0.001
Zn	"	0.045	<0.005	<0.005	NC	<0.005

¹Samples could not be collected at Well 7 during June sampling due to pump failure.

TABLE 2: 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 2019

Date ¹	Sump	NH ₃ -N	TSS ¹	BOD ₅
		----- mg L ⁻¹ -----		
04/09/2019	East	219	121	136
04/09/2019	West	2.8	4	<2
04/23/2019	East	253	91	119
04/23/2019	West	0.3	<4	<2
05/07/2019	East	426	229	193
05/07/2019	West	35	59	31
05/21/2019	East	8.2	9	5
05/21/2019	West	3.5	4	<2
06/11/2019	East	35	5	NRR ²
06/11/2019	West	0.5	<4	NRR ²
06/18/2019	East	115	31	44
06/18/2019	West	6.4	5	10

¹Total suspended solids.

²No reportable result because of laboratory control sample failure.

TABLE 3: ANALYSIS OF LAGOON SUPERNATANT APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE DURING MAY AND JUNE 2019

Constituent	Unit	May ¹	June ²
pH		8.0	8.0
Total Solids	%	0.13	0.1
Total Volatile Solids	"	53	52
Volatile Acids	mg L ⁻¹	9	6
TKN	"	525	578
NH ₃ -N	"	468	505
Total P	"	44	56.8
Cd	"	<0.001	<0.001
Cr	"	0.004	0.0022 ³
Cu	"	0.142	0.133
Mn	"	0.348	0.435
Ni	"	0.023	0.023
Pb	"	0.003	0.003
Zn	"	0.241	0.233

¹One sample.

²Mean of two samples.

³One analytical result was below the lab reporting limit of 0.002 mg L⁻¹. This result was treated as equal to the reporting limit for purposes of calculating the mean of two samples.

TABLE 4: VOLUMES AND DRY WEIGHTS OF LAGOON SUPERNATANT APPLIED TO FIELDS DURING MAY AND JUNE 2019 AT THE HANOVER PARK FISCHER FARM SITE

Field	Date	Biosolids Type	Volume (Gallons)	Dry Weight (Tons)
4	05/06/19	Supernatant	188,000	0.94
4	05/07/19	Supernatant	220,000	1.10
1	05/08/19	Supernatant	100,000	0.54
4	05/08/19	Supernatant	200,000	1.08
5	05/08/19	Supernatant	100,000	0.54
7	05/08/19	Supernatant	100,000	0.54
1	05/09/19	Supernatant	88,000	0.51
4	05/09/19	Supernatant	176,000	1.03
5	05/09/19	Supernatant	88,000	0.51
7	05/09/19	Supernatant	88,000	0.51
1	05/10/19	Supernatant	6,000	0.04
4	05/10/19	Supernatant	12,000	0.07
5	05/10/19	Supernatant	6,000	0.04
7	05/10/19	Supernatant	6,000	0.04
4	05/30/19	Supernatant	170,000	0.85
4	05/31/19	Supernatant	230,000	1.15
4	06/18/19	Supernatant	100,000	0.63
4	06/19/19	Supernatant	100,000	0.63
4	06/21/19	Supernatant	140,000	0.82
Total			2,118,000	11.57

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

