

*Protecting Our Water Environment*



*Metropolitan Water Reclamation District of Greater Chicago*

*MONITORING AND RESEARCH  
DEPARTMENT*

*REPORT NO. 20-29*

*HANOVER PARK WATER RECLAMATION PLANT*

*FISCHER FARM MONITORING REPORT FOR*

*THIRD QUARTER 2020*

*November 2020*

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

**HANOVER PARK WATER RECLAMATION PLANT  
FISCHER FARM MONITORING REPORT FOR  
THIRD QUARTER 2020**

**Monitoring and Research Department**  
**Edward W. Podczerwinski, Director**

**November 2020**

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Director of Monitoring and Research

November 12, 2020

Mr. Jim Miles  
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. Miles:

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2016-SC-61315, Monitoring Report for July, August, and September 2020

The attached tables contain the monitoring data for the Hanover Park Water Reclamation Plant (WRP) Fischer Farm site for July, August, and September 2020 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 July, August, and September 2020, and data for these samples are presented in [Table 2](#). The volumes of drainage water returned to the WRP during the third quarter were estimated as 4.5, 12.5, and 5.0 million gallons in July, August, and September, respectively. The analytical data for lagoon supernatant applied to Fischer Farm fields in July, August, and September are presented in [Table 3](#). The volumes and corresponding dry weights of lagoon supernatant 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 NH<sub>3</sub>-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<sub>3</sub>-N levels. Management practices are being implemented to reduce the biosolids loading in adjacent lagoons and application of supernatant in fields to confirm that these are the sources of high NH<sub>3</sub>-N in Well 7.

The data reported are as follows:

Subject: Hanover Park Water Reclamation Plant - Illinois Environmental Protection Agency Permit No. 2016-SC-61315, Monitoring Report for July, August, and September 2020

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 August 11, 2020.

Table 2 Analysis of Combined Surface and Subsurface Drainage From the Fischer Farm Site Returned to the Hanover Park Water Reclamation Plant During July, August, and September 2020.

Table 3 Analysis of Lagoon Supernatant Applied to Fields at the Hanover Park Fischer Farm Site During July, August, and September 2020.

Table 4 Volumes and Dry Weights of Lagoon Supernatant Applied to Fields During July, August, and September 2020 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  
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 ON AUGUST 11, 2020

Parameter	Unit	Monitoring Well No.				
		W-3 <sup>1</sup>	W-5	W-6	W-7	W-8
pH		7.4	7.6	7.6	7.4	7.9
EC	mS m <sup>-1</sup>	76	73	73	130	60
Cl <sup>-</sup>	mg L <sup>-1</sup>	10	19	20	30	11
SO <sub>4</sub> <sup>2-</sup>	"	88	102	117	230	70
Alkalinity as CaCO <sub>3</sub>	"	374	310	297	530	269
TKN	"	4.2	<1.0	<1.0	50	<1.0
NH <sub>3</sub> -N	"	0.33	0.36	<0.30	47	0.45
NO <sub>2</sub> <sup>-</sup> +NO <sub>3</sub> <sup>-</sup> -N	"	<0.25	<0.25	<0.25	<0.25	<0.25
Total P	"	0.97	<0.15	<0.15	1.7	<0.15
Cd	"	<0.002	<0.002	<0.002	<0.002	<0.002
Cr	"	0.016	<0.004	<0.004	0.019	<0.004
Cu	"	0.082	0.003	0.002	0.022	<0.002
Fe	"	8.1	2.9	1.6	17	0.93
Mn	"	1.02	0.031	0.032	0.296	0.023
Ni	"	0.021	<0.002	<0.002	0.019	<0.002
Zn	"	0.51	<0.01	<0.01	0.29	<0.01

<sup>1</sup>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 JULY, AUGUST, AND SEPTEMBER 2020

Date <sup>1</sup>	Sump	NH <sub>3</sub> -N	TSS <sup>1</sup>	BOD <sub>5</sub>
		----- mg L <sup>-1</sup> -----		
07/14/2020	East	72	5	8
07/14/2020	West	23	100	40
07/29/2020	East	67	6	6
07/29/2020	West	30	14	12
08/11/2020	East	111	15	13
08/11/2020	West	36	62	68
08/25/2020	East	133	16	11
08/25/2020	West	84	97	76
09/08/2020	East	138	15	15
09/08/2020	West	111	30	40
09/22/2020	East	159	16	13
09/22/2020	West	19	8	20

<sup>1</sup>Total suspended solids.

TABLE 3: ANALYSIS OF LAGOON SUPERNATANT APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE DURING JULY, AUGUST, AND SEPTEMBER 2020

Constituent	Unit	July	August	September
pH <sup>1</sup>		8.0	7.9	7.9
Total Solids	%	0.11	0.12	0.14
Total Volatile Solids	"	60.6	52.6	61.0
Volatile Acids	mg L <sup>-1</sup>	ND <sup>2</sup>	ND	ND
TKN	"	371	321	412
NH <sub>3</sub> -N	"	304	279	387
Total P	"	49	62	63
Cd	"	<0.002	<0.002	<0.002
Cr	"	<0.004	<0.040	<0.040
Cu	"	0.057	0.051	0.087
Mn	"	0.331	0.247	0.307
Ni	"	0.017	0.025	0.031
Pb	"	0.002	0.002	0.002
Zn	"	0.113	0.086	0.150

<sup>1</sup>pH was measured beyond 15 minutes holding time.

<sup>2</sup>No data. Analysis could not be completed due to staffing limitations associated with the COVID-19 pandemic.

TABLE 4: VOLUMES AND DRY WEIGHTS OF LAGOON SUPERNATANT APPLIED TO FIELDS DURING JULY, AUGUST, AND SEPTEMBER 2020 AT THE HANOVER PARK FISCHER FARM SITE

Field	Date	Biosolids Type	Volume (Gallons)	Dry Weight (Tons)
4	07/02/20	Supernatant	100,000	0.38
4	07/11/20	Supernatant	250,000	1.15
5	07/20/20	Supernatant	280,000	1.52
4	08/03/20	Supernatant	370,000	2.16
4	08/06/20	Supernatant	260,000	1.41
4	08/07/20	Supernatant	390,000	2.28
1	08/14/20	Supernatant	215,000	1.08
5	08/14/20	Supernatant	215,000	1.08
1	08/19/20	Supernatant	115,000	0.72
5	08/19/20	Supernatant	115,000	0.72
1	08/26/20	Supernatant	170,000	0.78
5	08/26/20	Supernatant	170,000	0.78
5	08/27/20	Supernatant	170,000	0.85
6	08/27/20	Supernatant	170,000	0.85
1	09/09/20	Supernatant	115,000	0.77
6	09/09/20	Supernatant	115,000	0.76
1	09/24/20	Supernatant	210,000	1.14
5	09/24/20	Supernatant	210,000	1.14
Total			3,640,000	19.56

<sup>1</sup>Difference between sum of dry weights and reported total is due to rounding.



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

