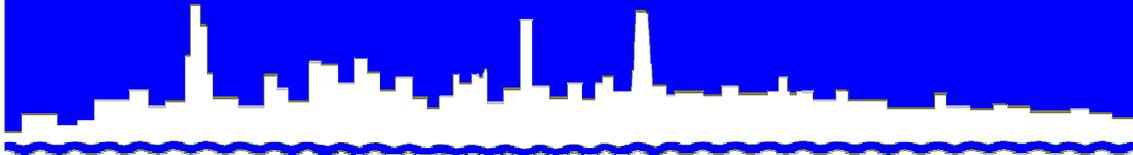


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 10-14

HANOVER PARK WATER RECLAMATION PLANT

FISCHER FARM MONITORING REPORT FOR

FOURTH QUARTER 2009

FEBRUARY 2010

Protecting Our Water Environment

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Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street

Chicago, Illinois 60611-3154

312.751.5190

Louis Kollias, P.E., BCEE

Director of Monitoring and Research

louis.kollias@mwr.org

February 26, 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-2951-1, Monitoring Report for
October, November, and December 2009

The attached report includes five tables of the monitoring results for the Hanover Park
Water Reclamation Plant Fischer Farm site for the fourth quarter of 2009.

Very truly yours,

Louis Kollias
Director
Monitoring and Research

LK:PL:kq

Enclosures

cc: Mr. Jay Patel, Manager, IEPA Region II - Des Plaines
Mr. Valdis Aistars, USEPA Region V
Mr. Ash Sajjad, USEPA Region V
Granato/Liston
O'Connor/Cox/Lindo

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street

Chicago, IL 60611-2803

(312) 751-5600

**HANOVER PARK WATER RECLAMATION PLANT
FISCHER FARM MONITORING REPORT**

FOURTH QUARTER 2009

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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 fourth quarter of 2009.

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ACKNOWLEDGEMENT

The assistance given by Ms. Minaxi Patel, Assistant Environmental Chemist, of the Environmental Monitoring and Research Division, and Mr. John Chavich, Supervising Environmental Chemist, 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 THE FOURTH QUARTER OF 2009

During October, November, and December 2009, 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.

A supplemental permit was issued by the IEPA on July 30, 2009, to modify the monitoring schedule for wells at the Fischer Farm sites from bi-weekly to once per quarter, except Well 7, which will be monitored bi-weekly. In addition, monitoring of Well 1 is no longer required.

The four monitoring wells were sampled on November 17, and Well 7 was sampled in October, November and December. 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 November and December. Analytical data for these samples are presented in Table 3. Inadvertently, drainage water was not sampled in October. The volumes of drainage water returned to the WRP during the fourth quarter were estimated as 8.53, 6.31, and 2.94 million gallons in October, November, and December, respectively. The analytical data for the lagoon supernatant applied to Fischer Farm fields during the quarter 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

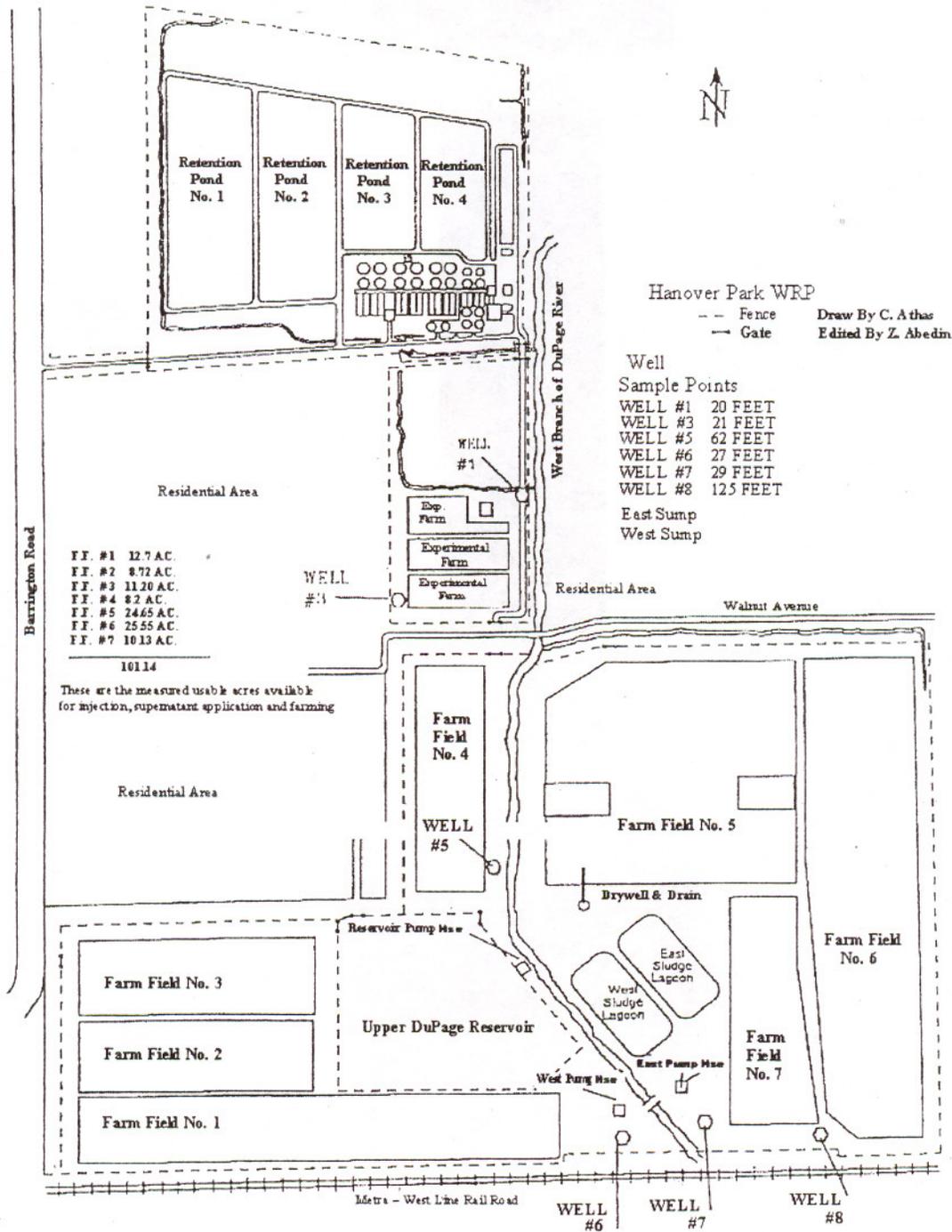


TABLE 1: ANALYSIS OF WATER FROM MONITORING WELL 7 AT
THE HANOVER PARK FISCHER FARM SITE SAMPLED
IN OCTOBER, NOVEMBER, AND DECEMBER 2009

| Parameter | Unit | Sample Date | | | | | |
|-------------------------------------|------------------|-------------|------------|------------------|------------|-------------|------------|
| | | October 6 | October 20 | October 27 | November 3 | November 17 | December 1 |
| pH ¹ | | 7.3 | 7.2 | 7.3 | 7.1 | 7.1 | 7.2 |
| EC | mS/m | 150 | 161 | 162 | 144 | 158 | 132 |
| Cl ⁻ | mg/L | 46 | 46 | 47 | 48 | 50 | 51 |
| SO ₄ ⁼ | “ | 291 | 258 | NRR ³ | 259 | 245 | 230 |
| Alkalinity ² | “ | 613 | 635 | 648 | 641 | 627 | 647 |
| TKN | “ | 19 | 19 | 19 | 17 | 15 | 14 |
| NH ₃ -N | “ | 19 | 17 | 18 | 15 | 14 | 14 |
| NO ₂ +NO ₃ -N | “ | 0.02 | 0.05 | 0.03 | 0.03 | 0.02 | 0.02 |
| Total P | “ | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | <0.02 |
| Cd | “ | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Cr | “ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Cu | “ | 0.0040 | <0.0005 | <0.0005 | 0.0015 | <0.0005 | 0.0013 |
| Fe | “ | 1.01 | 5.17 | 10.7 | 5.39 | 4.85 | 5.64 |
| Mn | “ | 0.0161 | 0.0573 | 0.1495 | 0.0610 | 0.0558 | 0.0640 |
| Ni | “ | <0.0006 | 0.0017 | 0.0022 | 0.0017 | 0.0017 | 0.0029 |
| Zn | “ | 0.7416 | 0.0589 | 0.6107 | 0.0719 | 0.0307 | 0.0891 |
| Fecal Coliform | MPN ⁴ | <1 | <1 | <1 | <1 | <1 | <1 |

¹Samples analyzed beyond recommended holding time of 15 minutes.

²As CaCO₃.

³No reportable result.

⁴Most probable number/100 mL.

TABLE 2: ANALYSIS OF WATER FROM MONITORING WELLS AT THE HANOVER PARK FISCHER FARM SITE SAMPLED ON NOVEMBER 17, 2009

| Parameter | Unit | Well No. | | | |
|-------------------------------------|------------------|----------|---------|---------|---------|
| | | 3 | 5 | 6 | 8 |
| pH ¹ | | 7.3 | 7.6 | 7.5 | 8.2 |
| EC | mS/m | 102 | 78 | 92 | 62 |
| Cl ⁻ | mg/L | 19 | 14 | 48 | 7 |
| SO ₄ ⁼ | “ | 182 | 100 | 133 | 51 |
| Alkalinity ² | “ | 394 | 321 | 307 | 287 |
| TKN | “ | 0.20 | 0.35 | 0.36 | 0.38 |
| NH ₃ -N | “ | <0.03 | 0.26 | 0.13 | 0.36 |
| NO ₂ +NO ₃ -N | “ | 0.08 | 0.02 | 0.02 | <0.02 |
| Total P | “ | 0.03 | 0.02 | 0.12 | 0.05 |
| Cd | “ | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Cr | “ | <0.001 | <0.001 | <0.001 | <0.001 |
| Cu | “ | 0.0039 | 0.0064 | 0.0017 | 0.0031 |
| Fe | “ | 0.620 | 1.57 | 2.36 | 0.848 |
| Mn | “ | 0.2031 | 0.0168 | 0.0375 | 0.0338 |
| Ni | “ | 0.0027 | 0.0021 | 0.0025 | 0.0009 |
| Zn | “ | 0.0102 | 0.0057 | 0.0100 | 0.0054 |
| Fecal Coliform | MPN ³ | 1 | <1 | <1 | <1 |

¹Samples analyzed beyond recommended holding time of 15 minutes.

²As CaCO₃.

³Most probable number/100 mL.

TABLE 3: ANALYSIS OF COMBINED SURFACE AND SUBSURFACE DRAINAGE FROM THE FISCHER FARM SITE RETURNED TO THE HANOVER PARK WATER RECLAMATION PLANT DURING NOVEMBER AND DECEMBER 2009

| Date | Sump | NH ₃ -N | TSS ¹ | BOD ₅ |
|------------|------|--------------------|------------------|------------------|
| | | ----- mg/L ----- | | |
| 11/17/2009 | East | 293 | 300 | NA ² |
| 11/17/2009 | West | 197 | 262 | NA |
| 11/30/2009 | East | 0.67 | 3 | 3 |
| 11/30/2009 | West | 14 | 14 | 12 |
| 12/1/2009 | East | 13 | 10 | 5 |
| 12/1/2009 | West | 0.46 | 13 | 11 |
| 12/15/2009 | East | 49 | 25 | 27 |
| 12/15/2009 | West | 11 | 11 | 14 |

¹Total Suspended Solids.

²No analysis; insufficient sample.

TABLE 4: ANALYSIS OF LAGOON SUPERNATANT APPLIED TO FIELDS
AT THE HANOVER PARK FISCHER FARM SITE DURING
OCTOBER AND NOVEMBER 2009

| Parameter | Unit | Concentration ¹ |
|-----------------------------|-------|----------------------------|
| pH | | 8.0 |
| TS | % | 0.14 |
| TVS ² | “ | 58.5 |
| TKN | mg/kg | 342,999 |
| NH ₃ -N | “ | 344,700 |
| Volatile Acids ³ | “ | 20,875 |
| Total P | “ | 39,786 |
| As | “ | 20.5 |
| Cd | “ | 0.0590 |
| Cr | “ | 2.46 |
| Cu | “ | 114 |
| Hg | “ | 0.19 |
| Mn | “ | 191.0 |
| Mo | “ | 2.15 |
| Ni | “ | 24.1 |
| Pb | “ | 2.81 |
| Se | “ | 5.74 |
| Zn | “ | 118 |

¹Values are the means of six samples.

²Total volatile solids as a percentage of total solids.

³As acetic acid.

TABLE 5: VOLUMES AND DRY WEIGHTS OF LAGOON SUPERNATANT
 APPLIED TO FIELDS AT THE HANOVER PARK FISCHER FARM SITE
 DURING OCTOBER AND NOVEMBER 2009

| Field | Date | Biosolids Type | Volume (Gallons) | Dry Weight (Tons) |
|-------|-------|----------------|---------------------|----------------------|
| 1 | 11/17 | Supernatant | 400,000 | 1.83 |
| 1 | 11/23 | “ | 250,000 | 1.15 |
| 5 | 10/5 | “ | 340,000 | 1.98 |
| 5 | 10/28 | “ | 540,000 | 2.93 |
| 5 | 11/17 | “ | 180,000 | 0.83 |
| Total | | | 1,710,000 | 8.72 |