Meeting Minutes

A regular meeting of the Board of Directors of the Walnut Creek Estates Homes Association, Inc. was held on September 19, 2011, beginning at 8:25 p.m. at the Hillsdale Presbyterian Church. The Vice President, Sue Pacinelli, was in the Chair and the Secretary, John Fricke, was present. The following Board members were also present: Todd DeYoung and Shani Crawford.

A quorum was established.

The Minutes of the previous Board Meeting from July 18, 2011, were presented. Shani moved acceptance of the minutes as presented. The motion was adopted.

Reports:

- The Treasurer (Todd) stated that the current accounts cash balance totals approximately $15,000.

- The Design Review Committee (John) stated that a dwelling plan review was in progress in Phase 1.

- The Lake Habitat Committee (Sue) stated that lake water quality testing with regard to recent comments about the sewer treatment plant had been conducted at three locations in the lake. The results are attached and a summary will be presented at the next annual meeting.

- The Trail Signage Committee (Todd) stated that several more signs are thought to be needed for installation along designated trails.

Unfinished Business:

- John noted the current assessment delinquency stands as described in July with two properties and a total of $1,300 assessment principal outstanding.

New Business:

- John moved the establishment of a Nominating Committee with Sue Pacinelli as the Chairperson. The motion was adopted.

- Shani moved to set the date of the Annual Homeowners' Association Meeting to be November 21 at 7:00 p.m. at the Hillsdale Presbyterian Church; or as shall be noticed in the proper time prior. The motion was adopted.

The meeting was adjourned at approximately 10:15 p.m.

John Fricke, Secretary

Approved:

SDK Laboratories

1000 Corey Road
P.O. Box 886
Hutchinson, KS 67504-0886
620-665-5661
FAX: 620-665-0559
TOLL FREE: 877-464-0623
www.sdklabs.com

Sample # 3516
Sample: Wastewater
Other ID: Sample 1 Dock

Date Received: 08/09/2011
Date/Time Sampled: 8/7/2011 19:55:00
Date Reported: 08/16/2011
Total Fee: $ 88.00

Pascinelli, Susan
18527 W. 250th Street
Paola, Ks 66071

ANALYSIS

	Result	Units	Date/Time Analyzed	Analyst
++pH - SM 4500-H+ B	7.95	s.u.	8/10/2011 13:42	SE
++Ammonia-Nitrogen - SM 4500-NH3 B	Less than 0.5	mg/L	8/11/2011 9:15	MH
++Nitrate-Nitrogen - SM 4500-NO3 D	Less than 1.0	mg/L	8/9/2011 13:10	SE
++Phosphorus - SM 4500-P E	Less than 0.1	mg/L	8/15/2011 8:30	DJ
++BOD-Biochemical Oxygen Demand-SM 5210B	Less than 2.0	mg/L	8/10/2011 10:45	DJ

****Sample receipt temperature = 19.2 degree C.**
****Sample beyond hold time for pH.**
++Denotes NELAP/KDHE Accredited Method. Lab Certificate #E-10152. Results meet all requirementsof NELAC unless noted.
Methods of analysis per EPA-600 or EPA SW-846, 3rd Ed., 1986 or Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992.

Approved By: Dennis Hogan, Laboratory Director

Copies:

The results reported pertain only to the samples as received by the laboratory

NELAP ACCREDITED TNI LABORATORY

SDK Laboratories

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Hutchinson, KS 67504-0886
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Sample # 3517
Sample: Wastewater
Other ID: Sample 2 Creek @ Treatment Plant

Date Received: 08/09/2011
Date/Time Sampled: 8/7/2011 19:55:00
Date Reported: 08/16/2011
Total Fee: $ 88.00

Pascinelli, Susan
18527 W. 250th Street
Paola, Ks 66071

ANALYSIS

	Result	Units	Date/Time Analyzed	Analyst
++pH - SM 4500-H+ B	8.04	s.u.	8/10/2011 13:44	SE
++Ammonia-Nitrogen - SM 4500-NH3 B	1.96	mg/L	8/11/2011 9:15	MH
++Nitrate-Nitrogen - SM 4500-NO3 D	Less than 1.0	mg/L	8/9/2011 13:10	SE
++Phosphorus - SM 4500-P E	0.55	mg/L	8/15/2011 8:30	DJ
++BOD-Biochemical Oxygen Demand-SM 5210B	Less than 3.0	mg/L	8/10/2011 10:45	DJ

****Sample receipt temperature = 19.2 degree C.**
****Sample beyond hold time for pH.**
++Denotes NELAP/KDHE Accredited Method. Lab Certificate #E-10152. Results meet all requirementsof NELAC unless noted.
Methods of analysis per EPA-600 or EPA SW-846, 3rd Ed., 1986 or Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992.

Approved By: Dennis Hogan, Laboratory Director

Copies:

The results reported pertain only to the samples as received by the laboratory

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Sample # 3518
Sample: Wastewater
Other ID: Sample 3 Beaver Creek

Date Received: 08/09/2011
Date/Time Sampled: 8/7/2011 19:55:00
Date Reported: 08/16/2011
Total Fee: $ 88.00

Pascinelli, Susan
18527 W. 250th Street
Paola, Ks 66071

ANALYSIS

	Result	Units	Date/Time Analyzed	Analyst
++pH - SM 4500-H+ B	8.05	s.u.	8/10/2011 13:45	SE
++Ammonia-Nitrogen - SM 4500-NH3 B	0.56	mg/L	8/11/2011 9:15	MH
++Nitrate-Nitrogen - SM 4500-NO3 D	Less than 1.0	mg/L	8/9/2011 13:10	SE
++Phosphorus - SM 4500-P E	0.19	mg/L	8/15/2011 8:30	DJ
++BOD-Biochemical Oxygen Demand-SM 5210B	Less than 3.0	mg/L	8/10/2011 10:45	DJ

****Sample receipt temperature = 19.2 degree C.**
****Sample beyond hold time for pH.**
++Denotes NELAP/KDHE Accredited Method. Lab Certificate #E-10152. Results meet all requirementsof NELAC unless noted.
Methods of analysis per EPA-600 or EPA SW-846, 3rd Ed., 1986 or Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992.

Approved By: Dennis Hogan , Laboratory Director
Dennis Hogan

Copies:

The results reported pertain only to the samples as received by the laboratory

NELAP ACCREDITED TNI LABORATORY

KANSAS

Mark Parkinson, Governar
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

Division of Environment

October 4, 2010

Miami County Commission
Director of Engineering Services
201 South Pearl Street
Suite 201
Paola, Kansas 66071

Re Wastewater inspection
Walnut Creek Estates
Permit # M-MC60-OO02

Dear Commissioners and Director:

I appreciate the courtesy extended by Tom Patterson and Tom Markus during my September 20th inspection of the wastewater treatment system serving the Walnut Creek Estates. The inspection was made to insure compliance with State and Federal regulations and your permit. This letter summarizes my findings and supplements comments made during the inspection.

Overall, considering the light loading from the STEP system and low number of homes, the plant is being well operated and maintained. A review of the effluent monitoring reports show compliance with permit effluent discharge limits.

The changes made to the electrical and aeration system since the last inspection appears to have solved the problems noted in the last inspection.

I did notice in past documents that the county does have some portable generators but they have never been checked to see if they are compatible to operate the sewage treatment plant. The plant has also never been wired for a generator. I would recommend this be done.

The operators are just getting started using a settelability test at the plant on a regular basis. I highly recommend they graph the results. Graphing allows you to see the settling and makes it easier to see changes in the settling from week to week or month to month. I have enclosed some information.

New regulations coming down in the next few years will likely put discharge limits of 8.5 mg/l total nitrogen and 1.5 mg/l total phosphorus on this facility. Now is a good time to begin looking at what it will take to keep this plant in compliance in the future. The operators need to learn more about controlling ammonia and possibly have a consultant provide some ideas of plant improvements that may be needed to meet these upcoming limits.

Since the plant was built a small lake has been built directly downstream of the plant discharge, so I feel compelled to make some observations. The green stuff in the backwater of the lake where the

creek enters the lake, is duckweed. Duckweed is not a problem and should not ever spread out into the pond. The duckweed tends to grow slow moving water and tin water with high nutrient levels like sewage treatment plant effluent. The plant is using the extra nutrients. If the lake levels were not backing up the water in the creek you would not see any duckweed.

The lake is shallow and has a nice population of algae/moss. This is to be expected with a lake just downstream of a sewage treatment plant. The algae/moss is very beneficial. You will notice a healthy fish population and clear water; this is because of the plants. The plants are filtering out any extra nutrients that could cause bluegreen algae blooms, providing oxygen to the water and providing harborage for small fish and amphibians. This is a very well balanced lake that I would encourage the homeowners not to try and manage with copper sulfate or other pesticides or grass eating carp.

Should you have any comments or questions concerning this letter please contact me by telephone at 785-842-4600 or by e-mail at vmontgomery@kdheks.gov .

Sincerely,

H Vic Montgomery
Environmental Scientist

Cc Mark Gerard, KDHE
NEDO – File – Paola 2.0 (Walnut Creek Estates)

KANSAS
RURAL
WATER
association
Quality water, quality life

P.O. Box 226 • Seneca, KS 66538 • 785/336-3760
FAX 785/336-2751 • http://www.krwa.net

May 24, 2011

Penny Evans, County Engineer
Miami County Government
201 S. Pearl St., Suite 201
Paola, Kansas 66071

Re: Miami Co. Sewer District at
Walnut Creek Estates
Kansas Permit No. M-MC60-OO02

Dear Penny,

On May 10, I met with Tom Markus concerning treatment problems and effluent ammonia violations at this treatment facility. Also in attendance were Vic Montgomery and Jason Solomon, KDHE. During my visit in November 2010, this plant appeared to be running satisfactorily and the county actually had to waste sludge as 30-minute settleability test results indicated 90% solids. This has rarely been the case with this plant over the years as solids rarely, if ever, build up to levels needed to adequately treat incoming wastewater. I was asked to check the plant again as effluent ammonia limits were exceeded in January, February and March 2011. During those three months, effluent ammonia concentrations were 34.4, 44.1 and 38.7 mg/L, respectively. The county's ammonia limit during these months is 16 mg/L.

Several approaches have been tried over the years to run this plant within permit limits, usually with little success. I know of at least two occasions where the county hauled in seed sludge from another nearby activated sludge plant to help develop solids in the aeration basin. According to Tom, the most recent seeding resulted in the solids basically flowing through the plant and into the polishing pond. Regardless, reseeding has not been the solution for achieving compliance and becomes very expensive if needed constantly. Other KDHE inspectors over the years have recommended adding dog food as a substitute food source for the bacteria in hopes of developing sufficiently concentrated mixed liquor. In my opinion, when operating staff is relying on such tactics to run an activated sludge plant, that indicates major problems. In the case of this plant, the raw influent does not have sufficient organic loading (BOD) to develop and sustain concentrated mixed liquor at levels needed. During my May visit, a 30-minute settleability test had results of 6%. At a minimum, such plants need 25-30% solids.

A review of influent data for this plant confirms this fact. Typically, raw domestic sewage has an average BOD of 150-200 mg/L. Influent BOD at this plant is rarely in this range. See the table below:

Sampling Date	Outfall	BOD Results
1/26/2010	001AG (influent)	73.6 mg/L
2/18/2010	001AG (influent)	59.2 mg/L
3/18/2010	001AG (influent)	121 mg/L

4/20/2010	001AG (influent)	32.4 mg/L
5/18/2010	001AG (influent)	56.9 mg/L
6/24/2010	001AG (influent)	30.5 mg/L
7/27/2010	001AG (influent)	58.2 mg/L
8/26/2010	001AG (influent)	72.5 mg/L
9/23/2010	001AG (influent)	28.5 mg/L
10/27/2010	001AG (influent)	31.6 mg/L
11/11/2010	001AG (influent)	78.2 mg/L
12/1/2010	001AG (influent)	102 mg/L
1/4/2011	001AG (influent)	65.1 mg/L
2/17/2011	001AG (influent)	54.8 mg/L
3/29/2011	001AG (influent)	64 mg/L

The two highest influent BOD months were March 2010 (121 mg/L BOD) and December 2010 (102 mg/L BOD), and even they are less than the typical strength of raw sewage. All remaining data is less than 50% of what is needed to produce sufficient mixed liquor. In my opinion, the main reason your influent BOD is so low is the type collection system used at Walnut Creek Estates. Called a STEP (Septic Tank Effluent Pumping) system, it is designed to catch and retain most sewage solids at each residence by using individual septic tanks. While this allows for constructing a less expensive pressure collection system, it results in less solids (and food) for building up bacteria at the plant. Without such solids, providing satisfactory treatment is very difficult.

At the county's other two sewer districts (Bucyrus and Club Estates), a similar STEP collection system is also used. However, both of these plants consistently meet all permit limits, including limits for ammonia. Neither of these sewer districts uses an activated sludge type treatment plant to treat incoming wastewater. Instead, both facilities use recirculating sand filters which rely more on the physical process of filtering the wastewater and less on biological principles. While sand filters still have a biological component to the process, it is coupled with filtration and is far better suited to treating lower strength BOD wastewater. In my opinion, the treatment system at Walnut Creek Estates is not compatible with the type collection system. Consequently, I recommend the county seriously consider replacing the existing activated sludge plant with a process that is more compatible treating lower strength BOD wastewater such as a sand filter or non-discharging lagoon. I realize such a solution is expensive, but continuing to run the plant while exceeding permit limits is probably not acceptable to KDHE either.

If I can be of further assistance, I can be reached at either 913-850-8822 or jeff@krwa.net. Funding for the above assistance was provided through a contractual arrangement between the Kansas Department of Health and Environment and the Kansas Rural Water Association (KRWA). Please visit the KRWA website at www.krwa.net for news and information concerning water and wastewater utilities, training opportunities, and other KRWA programs.

Sincerely,

Jeff Lamfers
Consultant

c: Tom Markus, Operator
Shelly Shores-Miller, KDHE, Topeka
Rod Geisler, KDHE, Topeka
Vic Montgomery, KDHE, Lawrence